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REPORT ON THE 1991 DISCHARGES FROM MUNICIPAL SEWAGE TREATMENT PLANTS IN ONTARIO

Volume 1 - Summary of Performance and Compliance

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FROM MUNICIPAL SEWAGE TREATMENT PLANTS
IN ONTARIO

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REPORT ON THE 1991 DISCHARGES FROM MUNICIPAL SEWAGE TREATMENT PLANTS IN ONTARIO

Report prepared by:

Water Resources Branch
in cooperation with
Regional Operations Division
Ontario Ministry of Environment and Energy

ABSTRACT

This report is a summary of the performance of 423 sewage treatment plants (STPs) operated by the Ministry of Environment and Energy (MOEE) or municipalities that discharge effluent directly into the surface waters of Ontario in 1991. Plant performance was assessed against either the limits stipulated in the Certificate of Approval (C of A) or in the absence of C of A limits, the guidelines in MOEE Policy 08-01 "Levels of Treatment for Municipal and Private Sewage Treatment Works Discharging to Surface Waters" and the Canada-US Agreement on Great Lakes Water Quality. Effluent quality was assessed against three conventional parameters : Biochemical Oxygen Demand (BOD_5), Suspended Solids (SS) and Total Phosphorus (TP).

The report is divided into two volumes. Volume I provides a summary of performance and compliance. Volume II presents the individual plant performance data.

In Volume I, sixty-two (62) STPs were assessed against C of A limits and 325 STPs were assessed against MOEE Policy effluent guidelines. The overall compliance rate is 76% in 1991.

In the report, compliance status, remedial action programs, waste loadings and plant bypasses were summarized. Historical trends on STP compliance rates and waste loadings discharged to the environment were analyzed. STP operation and abatement program were explained. The differnet types of sewage treatment plants in Ontario and their effectiveness were also discussed. All STPs were ranked by their performance. The performance of a STP was assessed by comparing its effluent average concentration to its limit requirements for BOD, SS and TP. The ten best and the ten worst performing STPs were identified in the report.

In Volume II, individual plant bypass and performance data are presented. The data is provided in a computer diskette, together with a menu-driver program to access the information.

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EXECUTIVE SUMMARY

This report assesses the performance of sewage treatment plants (STPs) in Ontario during 1991 in meeting effluent discharge limits and guidelines. The analysis covers 387 of the province's 423 STPs operated either by municipalities (179 plants), or by the Ministry of Environment and Energy (MOEE) on behalf of municipalities (244 plants). This annual publication is prepared by Water Resources Branch and Regional Operations Division of the MOEE.

Overall, 296 STPs out of 387 STPs (76%) assessed met all effluent discharge limits or guidelines. Sixty-two (62) STPs were assessed against their C of A limits. Fifty-one (51) plants complied with both their concentration and loading limits, with a 82% compliance rate. Three hundred and twenty-five (325) STPs were assessed against MOEE Policy 08-01 effluent guidelines. Of these, 245 (75%) were in compliance.

The performances of other 36 STPs were not determined, of these: 27 STPs did not discharge to surface water and were, therefore, not required to report effluent data; 1 STP was commissioned in 1991 and operated only part of the year; 8 STPs did not provide sufficient data for assessment.

Of the 91 STPs that were not in compliance in 1991, 73 (80%) had begun remedial action plans to expand or upgrade their treatment processes, or optimize their plant operations.

In this report, a STP is designated as being in non-compliance if its effluent exceeds the concentration or loading limits for one or more of the parameters specified in the C of A or the guidelines. A single exceedance would place a STP into the non-compliance category. The word "compliance", as used in this report, does not indicate that no contraventions of the legislation and regulations have occurred, but rather that the data recorded in the report do not, in themselves, demonstrate that there have been contraventions.

The MOEE Investigations and Enforcement Branch investigated 2 suspected infractions in 1991 and no charge was laid. In 1990, a prosecution was brought against the Regional Municipality of Sudbury for discharge of a lagoon contents. This was dismissed at the trial, however, an appeal was lodged by the Ministry against this decision in 1991. The Court of Appeal overturned the decision, finding the defendant guilty of violating the Certificate of Approval.

The 387 STPs assessed in the report were also ranked by comparing their effluent average concentrations to their limit requirements for BOD, SS and TP. The 10 best and the 10 worst performing STPs are highlighted in Section 3.4.

Section 4.2 summarizes the occurrences of primary and secondary bypasses. A primary bypass is defined as the discharge of raw sewage subject to no treatment except grit removal and/or disinfection. A secondary bypass is defined as the discharge of sewage that has undergone solids removal at the primary clarifiers but bypassed the biological treatment process. In most cases, plant bypasses are disinfected before discharge. Two hundred and four (204) STPs reported bypass information to MOEE. Seventy-five (75) had bypass occurrences in 1991. One hundred and sixty-nine (169) lagoons are not required to report bypass data as lagoons are designed to have no bypass provision within the boundary of the plant. The total volume of primary and secondary bypasses represent 0.1% and 0.5% of the total volume of fully treated effluent, respectively. Most of the bypasses occurred during the wet months of March and April.

This report is divided into two volumes. Volume I provides a summary of performance and compliance. Volume II presents the individual plant performance data contained in a computer diskette.

The report is one of the annual reports published by the Ministry relating to environmental studies. This report is not an assessment of the impacts of STP discharges on the environment. It is an assessment report on the performance of the plants against the limits/guidelines that the plants are required to meet. The reader should refer to other reports such as Industrial Discharges Report, Spills Action Centre Report, Water Quality Data Report and Air Quality Data Report, in order to have an overall assessment of the environment.

1.0 INTRODUCTION

1.1 Discharge Reporting

This report is a summary of the performance of all Sewage Treatment Plants (STPs) operated in 1991 that discharged effluent directly into the surface waters of Ontario. The report was first published in 1985 and updated annually.

Four hundred and twenty-three (423) Sewage Treatment Plants (STPs) were in operation in 1991. These STPs were operated either by the Ministry of Environment and Energy (MOEE) on behalf of the municipalities or by municipalities. The operating authority is required by the Ministry to monitor the effluent discharged from their plants and report the results to the MOEE. Effluent quality is judged by comparing reported values against numerical limits of Biochemical Oxygen Demand (BOD_5) , Suspended Solids (SS) and Total Phosphorus (TP) as stipulated in their Certificates of Approval (Cs of A). In the absence of Cs of A with limits specified, STPs were assessed against the BOD_5 and SS effluent guidelines in MOEE Policy 08-01 "Levels of Treatment for Municipal and Private Sewage Treatment Works Discharging to Surface Waters" and the TP guideline in the Canada-U.S. Agreement on Great Lakes Water Quality, 1983. The effluent requirements are discussed in Section 2.0.

Any STP that failed to meet any one of the three effluent parameter requirements was designated as being a non-compliance plant. Compliance trends are indicators of abatement progress. Information in this report is used by the Ministry to set priorities for STP remedial actions and to maintain a high compliance rate in Ontario.

1.2 How To Use This Report

This report consists of two volumes. Volume I provides a summary of performance and compliance. Volume II presents the individual plant performance data of the 423 STPs.

In Volume I, Section 1.0 outlines the objectives and the contents of the report. Section 2.0 provides information on effluent requirements. Section 3.0 summarizes the assessment results for all STPs in 1991, and ranks the ten best and ten worst performing plants. A summary of the waste loadings to the Great Lakes is given in Section 4.1. Bypass volumes, durations, frequencies and the number of STPs that experienced bypasses are presented in Section 4.2. Historical compliance status and waste loading trends are summarized in Section 5.0. Section 6.0 gives an overview of STP operation and enforcement actions. The distribution of STPs by geographic locations, treatment types and effectiveness is discussed in Section 7.0. Section 8.0 provides directions on how to obtain further information.

Some technical terms used in the report are defined in the Glossary of Terms section.

Five appendices are also provided in this report. Appendix A is a summary of STP compliance against Certificate of Approval Limits. Appendix B is a list of complying STPs assessed against MOEE Policy Guidelines. Appendix C is a list of non-complying STPs assessed against MOEE Policy Guidelines. Appendix D provides a summary of bypass occurrence. Appendix E provides the addresses and phone numbers of all MOEE regional and district offices.

Individual plant performance data are presented in Volume II of the report, which consists of three sections:

Section A	Design Capacity, Existing Flow and Bypass Occurrence
Section B	Primary and Secondary Bypass Data
Section C	Individual Plant Performance Data

Volume II of the report is available electronically in a computer diskette. This diskette contains a menu-driven computer program that allows readers to access the plant information. After the program is installed on an IBM compatible personal computer, plant performance data can be viewed on the video display or sent to a printer. Both volumes of the report are available from the MOEE by calling the Public Information Office, 135 St. Clair Avenue West, Toronto, Ontario, M4V 1P5, (416)-323-4321.

2.0 STP EFFLUENT REQUIREMENTS

2.1 The Significance of Conventional Parameters

Pollution control engineers design and operate sewage treatment plants based on the quantity of BOD_5 , SS and TP to be received and removed at the plants. These parameters are also used as indicators of the degree of pollution in receiving waters. In this report, they are used to assess STP performance.

Biochemical Oxygen Demand (BOD_5) is a measure of the amount of oxygen required by micro-organisms to reduce the organic matter in the sample in a period of five (5) days. A high concentration of BOD in the effluent is an indication of inadequate treatment. A discharge of a high BOD effluent can deplete the dissolved oxygen in the receiving waters, and in the more severe case, can cause fish kills.

Suspended Solids (SS), also known as Total Suspended Solids (TSS), is a measure of the amount of solids suspended in the sample. SS removal in effluent is important since excessive amount of solids discharged to a water course can kill fish by clogging their respiratory passages (gills), as well as causing aesthetic problems. Many trace metals and organics also have a tendency to adhere to the solids.

Total Phosphorus (TP) is a measure of the amount of all phosphorus available in the sample. Phosphorus is a nutrient that is essential to the growth of vegetation such as algae. An excessive amount of phosphorus may stimulate the over abundance of algae and weeds. Excessive algae and weeds can create large dissolved oxygen (D.O.) fluctuations in receiving waters (high D.O. in the day time due to photosynthesis and low D.O. at night due to respiration). Furthermore, when the algae and weeds die off in the fall, their decomposition will seriously deplete the D.O. to the extent that aquatic organisms cannot survive.

2.2 Certificate of Approval (C of A) Limits

A Certificate of Approval (C of A) is a legal document issued by the MOEE to approve the construction and operation of a STP. Prior to the construction of a STP, a full environmental assessment must be carried out to evaluate the plant's impact on the environment. The effluent concentration and/or loading limits are established during this environmental assessment process and stipulated in the C of A. The effluent discharge limits for each plant are set based on either the guidelines in the MOEE Policies or "how much" the receiving water is capable of handling without adverse effects, whichever is more stringent. The C of A limits are generally more stringent than the guidelines in MOEE Policy 08-01.

Most Certificate of Approval issued before 1985 give design or operation objectives but not compliance limits. A review of the C of A records showed that 83 of the 423 STPs have a C of A with specific compliance limits and only 69 of these Cs of A are in effect in 1991. The report assesses these STPs by their C of A limits. The remaining plants are assessed by MOEE Policy guidelines as explained in the next section. Also, if the C of A does not have a concentration limit for any one of the three parameters, the corresponding MOEE Policy effluent guidelines are used for assessment. Some Cs of A have both concentration and loading limits. In that case, the effluent loadings discharged from the plant are also assessed against the loading limits.

Any STP that failed to meet the C of A concentration or loading limits for any one of the three parameters at any given time during the year are identified in this report as not in compliance in 1991.

Failure to comply with a C of A requirement can result in enforcement action under the Ontario Water Resources Act or the Environmental Protection Act.

2.3 MOEE Policy Effluent Guidelines

There are three MOEE Policies which specify STP effluent guidelines.

MOEE Policy 08-01 **"Levels of Treatment for Municipal and Private Sewage Treatment Works Discharging to Surface Waters".**

This policy describes the levels of treatment that the Ministry will require at municipal and private sewage treatment works discharging to surface water. Table 1 below lists the Effluent Guidelines for BOD_5 and SS for different treatment types. These effluent guidelines were derived based on the effluent quality each treatment type is capable of achieving.

MOEE Policy 08-04 **"Policy to Govern the Provision, Operation and Assessment of Phosphorus Removal Facilities at Municipal, Institutional and Private Sewage Treatment Works".**

This policy describes the requirements for the provision, operation and assessment of phosphorus removal facilities. The policy is being revised to reflect the Canada-U.S. Agreement on Great Lakes Water Quality requirement that effluent TP shall be assessed on a monthly basis.

MOEE Policy 08-06 **"Policy to Govern the Sampling and Analysis Requirement for Municipal and Private Sewage Treatment Works (Liquid Waste Streams only)".**

This policy describes the MOEE sampling and analysis requirements for municipal and private sewage treatment plants for the purpose of assessing plant performance and compliance with effluent requirements.

STPs which do not have C of A limits were assessed against these effluent guidelines as presented in Table 1. ***BOD_5 and SS concentrations were assessed based on annual averages as required by MOEE Policy 08-01. TP concentration was assessed based on monthly average as required by the Canada - U.S. Agreement on Great Lakes Water Quality, 1983.***

TABLE 1: MOEE POLICY EFFLUENT GUIDELINES
Based on Policy 08-01, and Canada-U.S. Agreement, 1983

Type of Treatment	BOD_5 Annual Average	SS Annual Average	TP Monthly Average
PRIMARY			
without TP removal	30% removal	50% removal	NA
with TP removal	50% removal	70% removal	1.0 mg/l
SECONDARY			
without TP removal	25 mg/l	25 mg/l	NA
with TP removal	25 mg/l	25 mg/l	1.0 mg/l
LAGOONS			
without TP removal	30 mg/l	40 mg/l	NA
continuous TP removal	30 mg/l	40 mg/l	1.0 mg/l
batch TP removal	25 mg/l	25 mg/l	1.0 mg/l

NA - Not Applicable

Communal Septic Systems have the same effluent guidelines as the Primary plants. Tertiary treatment plants have the same effluent guidelines as the Secondary treatment plants.

Any STPs that failed to meet the effluent guidelines given in Table 1 above for any one of the three parameter requirements during the year are identified in this report as not in compliance with MOEE Policy Effluent Guidelines in 1991.

3.0 1991 STATUS OF COMPLIANCE AND REMEDIAL MEASURES

3.1 Assessment by Certificate of Approval Limits

Sixty-nine (69) STPs have a C of A with concentration limits for any one or all three parameters of BOD_5 , SS and TP. Thirty eight (38) out of these 69 STPs have loading limits. If the concentration limit for any one of the three parameters (BOD, SS, TP) is not given in the C of A, then the MOEE Policy effluent guideline for the missing parameter(s) was used for compliance assessment.

The performances of the following four (4) plants were not evaluated in this report due to insufficient data provided to the MOEE:

Almonte Lagoon	SE Region	Loading not assessed
Kingsville Lagoon	SW Region	Concentration not assessed
Palmerston WPCP	WC Region	Concentration not assessed
Winchester Lagoon	WC Region	Loading not assessed

Palmerston WPCP had provided monthly average data to the MOEE but failed to provide individual sample results for assessment against the averages based on 'three bi-weekly samples' as specified in its C of A.

The performances of the other three (3) plants were not evaluated due to:

- Insufficient data was reported by the Amherstburg WPCP, SW Region. The Ministry has taken over the operation of the plant since June 1991. The data from January to May was not reported to the Ministry.

- Val Gagne Lagoon, NE Region and Spencerville Lagoon, SE Region did not discharge in 1991 and their performance were not evaluated.

Plants were considered to have insufficient data if any one of the following conditions applied:

- continuous discharge STPs with 4 or more months of data not reported
- seasonal or annual discharge lagoons that did not report any effluent concentration data (for concentration assessment) and/or volume/duration of discharge (for loading assessment)

The actual number of STPs for which their compliance status can be assessed is 62 , with respect to both concentration and loading limits (64 for concentration limits alone and 38 for loading limits alone). The percentage of compliance is calculated based on the number of STPs actually assessed.

For concentration limits assessment, 53 STPs (83%) complied with the effluent limit requirements. Table 2-A summarizes the compliance status with concentration limits for the six regions. Figure 1-A is a bar chart showing the STP compliance status.

For loading limits assessment, 36 STPs (95%) were in compliance. Table 2-B and Figure 1-B show the compliance status with loading limits.

Table 2-C and Figure 1-C show the overall compliance status for both concentration and loading limits. Fifty-one (51) out of 62 STPs (82%) comply with all limit requirements.

Appendix A lists all the STPs assessed by C of A limits and their compliance status for this year and the last four years. It also identifies whether the plant had a remedial program in place. Historical compliance trends are discussed in Section 5.0.

TABLE 2-A

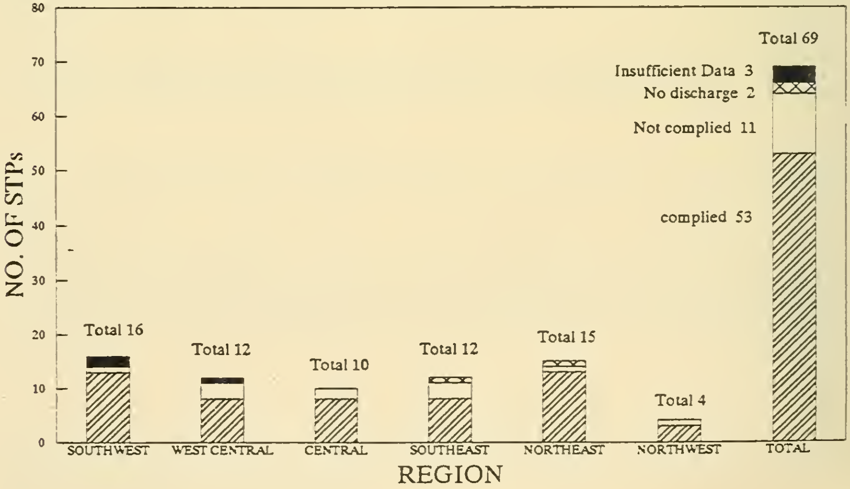
SUMMARY OF ASSESSMENT AGAINST CERTIFICATE OF APPROVAL EFFLUENT CONCENTRATION LIMITS, 1991

Region	Number of STPs with Limits	Number of STPs Actually Assessed				Number of STPs Meeting			
		ALL THREE LIMITS	BOD LIMIT	SS LIMIT	TP LIMIT	ALL THREE LIMITS	BOD LIMIT	SS LIMIT	TP LIMIT
SOUTHWEST	16	14	14	14	14	13	14	13	14
WEST CENTRAL	12	11	11	11	10	8	9	8	9
CENTRAL	10	10	10	10	10	8	10	10	8
SOUTHEAST	12	11	10	10	8	8	8	9	6
NORTHEAST	15	14	14	14	12	13	14	13	12
NORTHWEST	4	4	4	4	1	3	3	3	1
TOTAL	69	64	63	63	55	53	58	56	50
% COMPLIED						83%	92%	89%	91%

% COMPLIED is the percentage of plants complied with the parameter as compared to the number of plants actually assessed.
"ALL THREE LIMITS" means limits of BOD, SS and TP.

FIGURE 1-A

ASSESSMENT AGAINST C OF A CONCENTRATION LIMITS, 1991



"NOT complied" means STPs that failed to meet the C of A limits for any one of the three parameters at any given time during the year.

TABLE 2–B

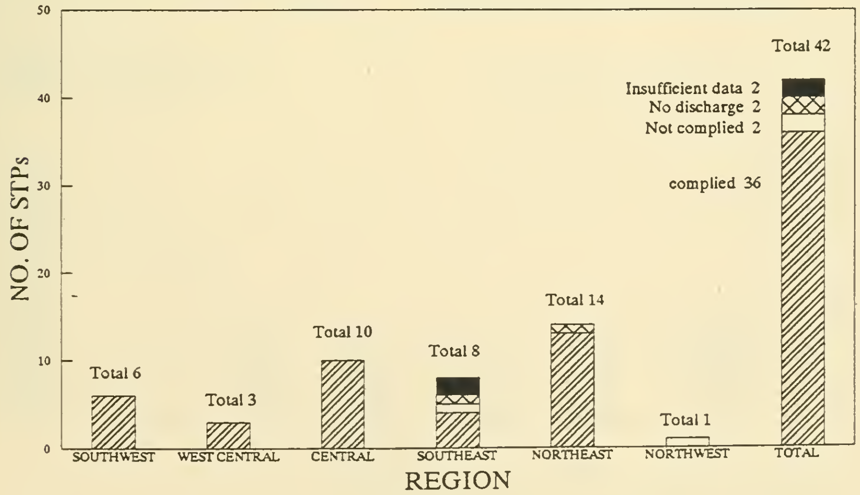
SUMMARY OF ASSESSMENT AGAINST CERTIFICATE OF APPROVAL EFFLUENT LOADING LIMITS, 1991

Region	Number of STPs with Limits	Number of STPs Actually Assessed				Number of STPs Meeting			
		ALL THREE LIMITS	BOD LIMIT	SS LIMIT	TP LIMIT	ALL THREE LIMITS	BOD LIMIT	SS LIMIT	TP LIMIT
SOUTHWEST	6	6	6	6	6	6	6	6	6
WEST CENTRAL	3	3	3	3	3	3	3	3	3
CENTRAL	10	10	3	3	9	10	3	3	9
SOUTHEAST	8	5	5	5	4	4	4	4	3
NORTHEAST	14	13	13	13	11	13	13	13	11
NORTHWEST	1	1	1	1	0	0	0	1	0
TOTAL	42	38	31	31	33	36	29	30	32
% COMPLIED						95%	94%	97%	97%

% COMPLIED is the percentage of plants complied with the parameter as compared to the number of plants actually assessed.

FIGURE 1–B

ASSESSMENT AGAINST C OF A LOADING LIMITS, 1991



"NOT complied" means STPs that failed to meet the C of A limits for any one of the three parameters at any given time during the year.

TABLE 2–C

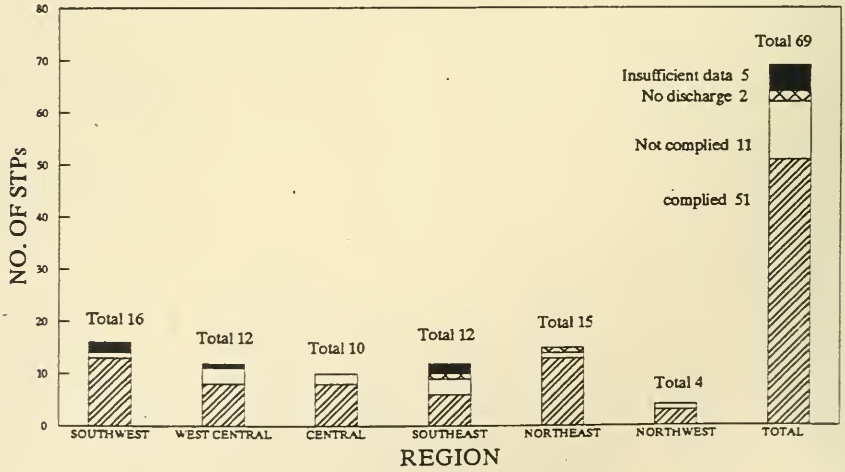
SUMMARY OF ASSESSMENT AGAINST CERTIFICATE OF APPROVAL EFFLUENT CONCENTRATION & LOADING LIMITS, 1991

Region	Number of STPs with Limits	Number of STPs Assessed Against			Number of STPs Meeting Limits for		
		Concentration	Loading	Both	Concentration	Loading	Both
SOUTHWEST	16	14	6	14	13	6	13
WEST CENTRAL	12	11	3	11	8	3	8
CENTRAL	10	10	10	10	8	10	8
SOUTHEAST	12	11	5	9	8	4	6
NORTHEAST	15	14	13	14	13	13	13
NORTHWEST	4	4	1	4	3	0	3
TOTAL	69	64	38	62	53	36	51
% COMPLIED					83%	95%	82%

% COMPLIED is the percentage of plants complied with the limits, as compared to the number of plants actually assessed.

FIGURE 1–C

ASSESSMENT AGAINST C OF A CONCENTRATION & LOADING LIMITS, 1991



"NOT complied" means STPs that failed to meet the C of A limits (either Concentration or Loading) for any one of the three paramenters at any given time during the year.

3.2 Assessment by MOEE Policy Effluent Guidelines

Three hundred and fifty-four (354) STPs do not have a C of A with effluent limits specified. These STPs were referred to as non-C of A plants and were assessed against the MOEE Policy effluent guidelines as explained in Section 2.3. The performances of twenty-nine (29) STPs were not evaluated because of the following reasons:

a. **No Direct Discharge to Surface Water** - 25 STPs did not discharge directly to surface water. Many of these are exfiltration facilities or lagoons that do not require discharge in 1991. These plants are:

Southwest Region
Markdale Lagoon
McGregor Lagoon
Tobermonry Lagoon
Mitchell's Bay Lagoon

West Central Region
Airport WPCP

Central Region
Beaverton River 1 Lagoon
Beeton Lagoon
Harmony Creek WPCP No.1
Harmony Creek WPCP No.2
Wasaga Beach WPCP

Southeast Region
Lansdowne Lagoon

Northeast Region
Capreol Lagoon
Desbarats
Dubreuilville Lagoon
Glackmeyer Lagoon
Larder Lake Townsite
Mattawa Lagoon
Opasatika Lagoon
Temagami Lagoon
Warren Lagoon
Webbwood Lagoon
White River Lagoon

Northwest Region
Beardmore Lagoon
Caramats
Terrace Bay Lagoon

b. **Insufficient Data for Assessment** - 3 STPs did not provide sufficient data for assessment.

Southwest Region
Tilbury Lagoon

West Central Region
Smithville Lagoon

Southeast Region
Embrun Lagoon

c. **New Plants** - 1 STP started operation in 1991 and did not have sufficient data for assessment.

Central Region
Wasago Lagoon

The number of STPs actually assessed for compliance against MOEE Policy effluent guidelines is 325. Of these, 245 (75%) met the guidelines for all 3 parameters (See Table 3 and Figure 2). The percentage of compliance is calculated based on the number of STPs actually assessed.

Appendix B lists the STPs, by Regions, that were *in compliance* with effluent requirements. A similar list of STPs *not in compliance* is provided in Appendix C. Both appendices also summarize the compliance status of the plants for the previous four years as well as the status of their remedial programs in 1991. Remedial measures for the non-complying plants are discussed in Section 3.4.

3.3 Summary of Assessment

The report found that 51 plants complied with the C of A limit requirements while 11 plants failed to comply. The performance of seven (7) plants were not evaluated due to insufficient data or no discharge in 1991.

The report also found that 245 plants met the MOEE Policy guideline requirements while 80 plants failed to meet. The performance of twenty-nine (29) plants were not assessed due to insufficient data, no discharge to surface water or new plant started operation in 1991.

Summarizing the two assessments, 296 (76%) plants complied with either the C of A limits or MOEE Policy guidelines while 91 (24%) STPs failed to comply. A summary of the overall assessment is presented in the following table:

No. of STPs	C of A Limits	MOEE Policy Guidelines	Overall Assessment
Complying Non-Complying	51 (82%) 11 (18%)	245 (75%) 80 (25%)	296 (76%) 91 (24%)
ACTUALLY ASSESSED	62	325	387
NO DISCHARGE	2	25	27
INSUFFICIENT DATA	5	3	8
NEW PLANTS	0	1	1
TOTAL	69	354	423

TABLE 3

SUMMARY OF ASSESSMENT AGAINST MOEE POLICY EFFLUENT GUIDELINES FOR NON-C OF A PLANTS, 1991

Region	Total Number of STPs	Number of STPs Assessed	Number of STPs Meeting Guidelines for			
			All three Parameters	BOD *	SS *	TP +
SOUTHWEST	90	85	57	82	62	74
WEST CENTRAL	44	42	33	41	40	37
CENTRAL	70	64	53	62	61	55
SOUTHEAST	56	54	33	47	38	44
NORTHEAST	70	59	50	55	52	58
NORTHWEST	24	21	19	21	19	21
TOTAL	354	325	245	308	272	289
% COMPLIED			75%	95%	84%	89%

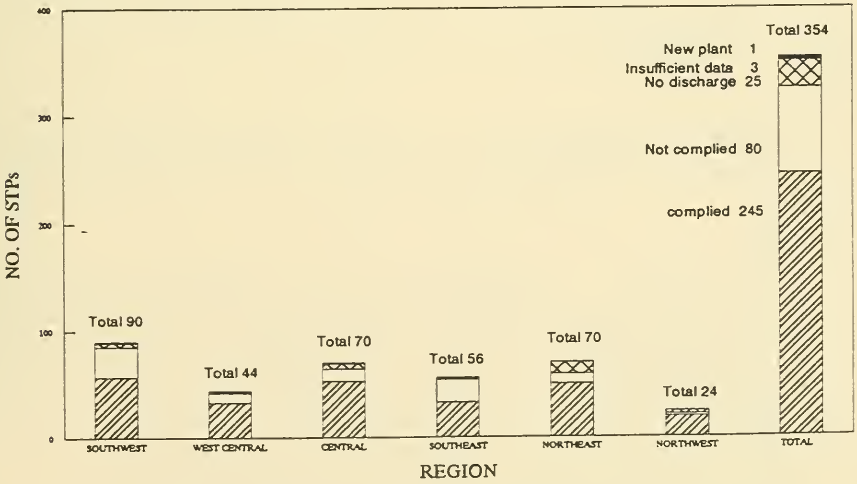
% COMPLIED is the percentage of plants complied with the guidelines as compared to the number of plants actually assessed.

* BOD and SS guideline assessment based on annual averages.

+ TP guideline assessment based on monthly averages; one or more months out of compliance meant the plant was out of compliance for the year.

FIGURE 2

ASSESSMENT AGAINST MOEE POLICY EFFLUENT GUIDELINES FOR NON-C OF A PLANTS FOR ALL THREE PARAMETERS, 1991



"NOT complied" means STPs that failed to meet the MOEE Policy guidelines for any one of the three parameters at any given time during the year.

3.4 Ranking of STPs by Performance

All STPs except those with insufficient data were ranked by their performance. The following procedures were used:

Step 1

The Parameter Performance Index (PPI) for each of the 3 parameters of BOD_5 ,SS and TP was calculated for each plant as follow:

$$\begin{array}{c}\text{Parameter}\\ \text{Performance Index}\\ (\text{ PPI })\end{array} = \frac{\text{Para. limit} - \text{Para. effluent conc.}}{\text{Parameter limit}} \times 100\%$$

Parameter limit was taken from the C of A or MOEE Policy effluent guidelines. For simplicity, the PPI for TP was based on an annual average instead of monthly averages. Since the MOEE Policy effluent guidelines for BOD and SS for primary STPs are based on percent removals, the parameter limit in calculating PPI for primary plants was estimated by multiplying the parameter of raw sewage concentration and the required percentage of removal. Loading limits were not assessed in this evaluation.

Step 2

An Overall Performance Index (OPI) was calculated for each plant using the following formula:

$$\begin{array}{c}\text{Overall}\\ \text{Performance Index}\\ (\text{ OPI })\end{array} = \frac{(\text{BOD PI}) + (\text{SS PI}) + (\text{TP PI})}{3} \; \%$$

A positive OPI indicates the plant performed better than its effluent limits, while a negative OPI indicates the plant performed worse than its effluent limits.

Step 3

The 387 STPs (62 C of A plants and 325 non-C of A plants) were ranked on the basis of their OPI. Since effluent limits in the C of A were based on either environmental impact assessment or policy guidelines, the performance ranking provided an indirect measure of the environmental impacts for the C of A plants. For those STPs which do not have C of A limits, it is assumed that the policy guidelines are sufficient to protect their receiving waters. However, the overall performance of a STP can be biased by the poor performance of one of more of the 3 parameters assessed. The ten best performing STPs and the ten worst performing STPs are presented in Table 4 and Figure 3.

TABLE 4
THE TEN BEST AND WORST PERFORMING STPs, 1991

THE TEN WORST PERFORMING STPs

Name of Plant	Region	Effluent Limits mg/l BOD	SS	TP	Average Effluent Quality BOD	SS	TP	Parameter Performance Index BOD	SS	TP	OPI %
BELLE VALLEE LAGOON	NE	30.0	40.0	NA	118.0	380.0	38.2	−293	−850	NA	−572
COCHRANE WPCP	NE	25.0	25.0	NA	49.3	118.3	3.0	−97	−373	NA	−235
L'ORIGNAL WPCP *	SE	25.0	25.0	NA	43.3	77.9	4.2	−73	−212	NA	−142
WATFORD LAGOON *	SW	25.0	25.0	1.0	8.4	150.0	0.6	66	−500	45	−130
EARLTON LAGOON	NE	30.0	40.0	NA	44.7	96.7	3.0	−49	−142	NA	−95
POINT EDWARD WPCP *	SW	60.0	44.0	1.0	69.0	66.0	2.7	−15	−51	−166	−77
CARLETON PLACE WPCP *	SE	25.0	25.0	1.0	25.8	52.4	1.8	−3	−110	−80	−64
AMHERSTVIEW LAGOON *	SE	30.0	40.0	NA	31.2	86.6	3.8	−4	−117	NA	−60
MERLIN PV LAGOON *	SW	25.0	25.0	1.0	13.2	93.4	0.6	47	−274	45	−60
RODNEY LAGOON *	SW	25.0	25.0	1.0	36.2	44.7	1.3	−45	−79	−33	−52

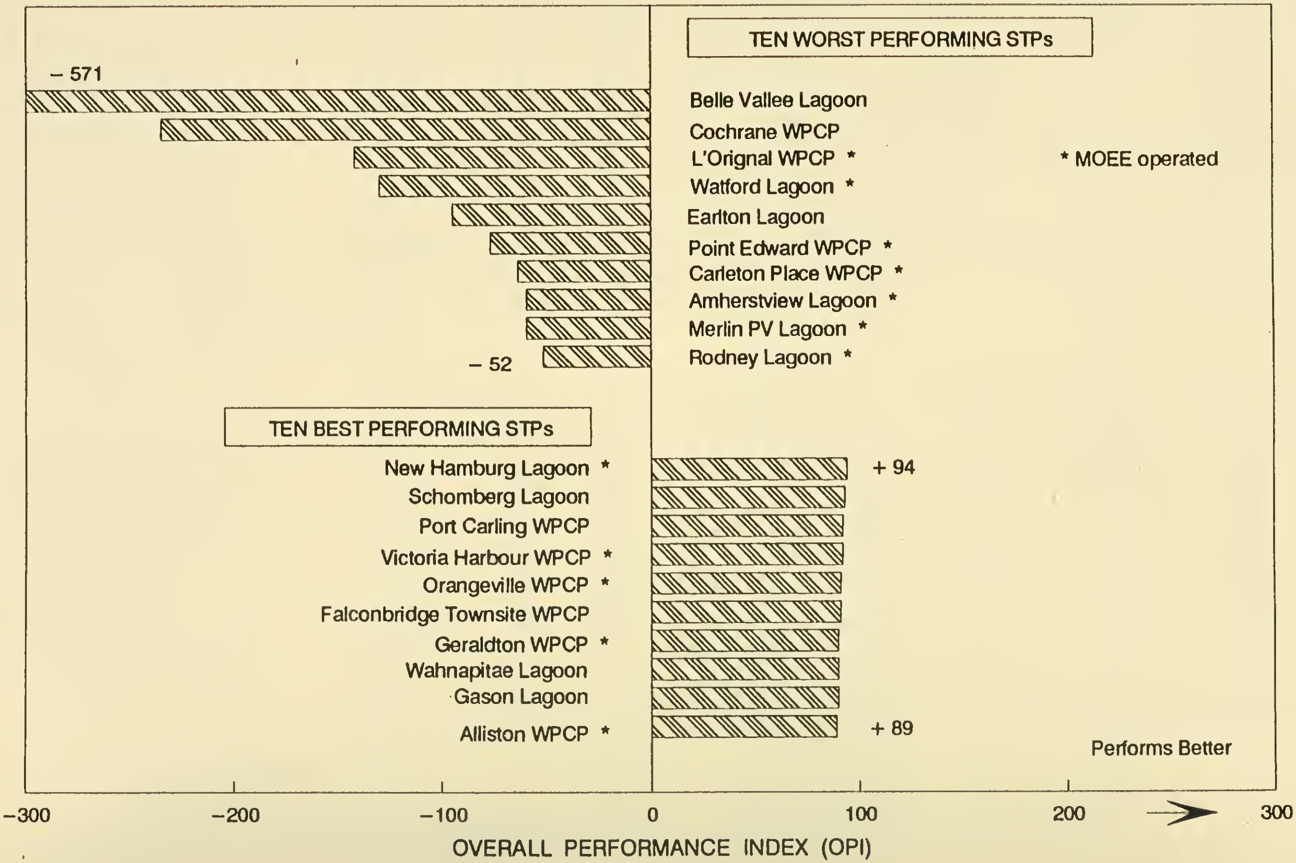
* MOEE operated NA – Not applicable *Remedial actions for these ten plants were summarized on page 18.*

THE TEN BEST PERFORMING STPs

Name of Plant	Region	Effluent Limits mg/l BOD	SS	TP	Average Effluent Quality BOD	SS	TP	Parameter Performance Index BOD	SS	TP	OPI %
NEW HAMBURG LAGOON *	WC	30.0	40.0	NA	2.3	1.5	0.38	92	96	NA	94
SCHOMBERG LAGOON	C	30.0	40.0	1.0	1.5	4.3	0.06	95	89	94	93
PORT CARLING WPCP	C	25.0	25.0	1.0	1.3	1.3	0.14	95	95	87	92
VICTORIA HARBOUR WPCP *	C	25.0	25.0	1.0	1.6	1.2	0.13	94	95	87	92
ORANGEVILLE WPCP *	WC	25.0	25.0	1.0	1.4	2.5	0.13	94	90	87	91
FALCONBRIDGE TOWNSITE WPCP	NE	25.0	25.0	NA	1.7	2.9	0.04	93	88	NA	91
GERALDTON WPCP *	NW	25.0	25.0	NA	2.7	2.6	1.68	89	90	NA	90
WAHNAPITAE LAGOON	NE	30.0	40.0	NA	2.2	5.3	0.04	93	87	NA	90
GARSON LAGOON	NE	30.0	40.0	NA	3.0	3.9	0.85	90	90	NA	90
ALLISTON WPCP *	C	25.0	25.0	1.0	1.2	1.2	0.22	95	95	78	89

* MOEE operated NA – Not applicable

FIGURE 3
THE TEN BEST AND WORST PERFORMING STPs, 1991



3.5 Remedial Measures

Remedial measures are required by the MOEE for non-complying STPs in order to improve their performance. Non-compliance may due to such things as:

- design problems such as organic or hydraulic overloading, obsolete equipment
- operational problems such as inadequate process control or equipment maintenance
- abnormal incidents such as industrial spills in the sewerage system or leaky sewers which lead to high inflows and infiltration

Design problems and leaky sewers can be corrected by capital works such as plant modification, expansion or sewer rehabilitation. Major upgrading or plant expansion is required to go through a class environmental assessment to review possible alternatives and their impact on the environment. When a decision is made, funding requirements and approval to expand must be obtained from the local Municipal Council and the MOEE before detailed design and construction can begin. Major upgrading may take 3 to 5 years to complete.

Operational problems and industrial spills can be improved with better process control and maintenance, operators training and enforcement of a local Sewer Use by-law by the municipality. A model Sewer Use by-law has been developed by the MOEE as a reference for municipalities to adopt.

Table 5-A summarizes the number of STPs that exceeded discharge limits and that reported remedial actions taken. It shows that 73 out of the 91 non-complying STPs, or an average of 80% , have undertaken remedial actions.

TABLE 5-A: SUMMARY OF NON-COMPLYING STPs REPORTING REMEDIAL ACTIONS

Region	Number of C of A STPs		Number of Non-C of A STPs		% of STPs with remedial action
	exceeded limit	had remedial action	exceeded limit	had remedial action	
Southwest	1	0	28	28	97%
West Central	3	1	9	6	58%
Central	2	2	11	10	92%
Southeast	3	1	21	15	67%
Northeast	1	0	9	7	70%
Northwest	1	1	2	2	100%
Total	11	5	80	68	80%

Remedial actions undertaken by the ten worst performing plants identified in Section 3.3 (Table 4) and the operational problems encountered by these plants were discussed in the following paragraphs:

Belle Vallee Lagoon

The lagoon cells have been chemically and biologically overloaded with effluent from a butter factory which closed down in November 1991. The Municipality has been requested to enforce the sewer use by-law to control discharges that are connected to their sewerage systems. The Operating Authority will also modify the treatment process to further reduce the BOD level prior to discharge. It is expected that the plant will meet the effluent guidelines in Spring of 1993.

Cochrane WPCP

Many of the problems associated with this plant are due to over capacity. Plant expansion is underway and is scheduled for completion by August 1992.

L'Orignal WPCP

Operational problems in the clarifier, aeration basin and return sludge pipe that inhibited the performance of the plant were corrected. A project is underway to further optimize the operation of the plant. It is anticipated that the sewage works will conform with the Ministry Policy effluent guidelines in 1993.

Watford Lagoon

The high suspended solids in the effluent was biased by the one sample taken at the end of the discharge period by an inexperienced operator during inclement weather, ie. very high winds. The data reported to the MOEE may not be representative of the 'true' effluent quality. No further discharge took place that year. The operator has since been instructed in proper sampling techniques and requirements. It is anticipated that this facility will meet the effluent requirements in 1992.

Earlton Lagoon

The lagoon is hydraulically overloaded. The Operating Authority has started a flow monitoring program to identify the inflow / infiltration problem in the sewage collection system. The Municipality has also passed a by-law to restrict the discharge of storm water from roof drains to sanitary sewer.

Point Edward WPCP

The construction work to upgrade this primary sewage treatment facility to secondary treatment has been completed in late 1992. It is anticipated that the facility will meet the effluent requirements in 1993.

Carleton Place WPCP

A major reconstruction program is underway at the Carleton Place sewage works. The construction of new primary clarifiers and the installation of a new chemical feed system are near completion. The reconstruction of the secondary treatment units is scheduled for completion by July 1993. The plant is anticipated to comply with the C of A effluent limits in 1994.

Amherstview Lagoon

The lagoon system continues to be hydraulically overloaded and problems persist with algae growth. These factors inhibit the suspended solids removal performance. An Environmental Study Report (ESR) dated June 1991, identifies "preferred" and alternative approaches to upgrading the Amherstview STP. The ESR was reviewed by MOEE staff. Collection of additional information on receiving stream water quality assessment, alternative treatment system designs, and effluent flow rate evaluations have been recommended to the municipality.

Merlin PV Lagoon

The difficulties incurred with this facility are currently under investigation by the Operating Authority. The phosphorus removal process is being upgraded. Every effort is being made by the operator to ensure compliance with all required parameters.

Rodney Lagoon

This facility has undergone a major expansion and conversion to a Sutton Process. Operational difficulties have been experienced with the new process. Further modifications to the process are underway. It is anticipated that the facility will be in compliance with its' requirements once these changes have been made.

4.0 1991 WASTE LOADINGS AND BYPASSES

4.1 Waste Loadings

Table 6 summarizes the annual average loadings of BOD, SS and TP discharged to the eight (8) minor basins of the Great Lakes. The waste loadings for each minor basin were calculated by summing the annual average loading of each plant that discharged to the basin. The total average loadings divided by the total average daily flows (ADF) give the average concentrations.

The following pie charts show the distribution of the Flows and Loadings among the 8 minor basins:

Figure 4-A shows the Average Daily Flows discharged into the minor basins.
Figure 4-B shows the BOD Loadings to the minor basins.
Figure 4-C shows the SS Loadings to minor basins.
Figure 4-D shows the TP Loadings to the minor basins.

Lake Ontario, Lake Erie and Ottawa River are the three minor basins that received most (about 85%) of the sewage flows and waste loadings. Discharges to Lake Erie, Lake Huron, Lake Ontario and Lake Winnipeg East had better effluent quality. Discharges to Lake Superior, Ottawa River, and St. Lawrence River had poorer effluent quality, due to a high proportion of effluent from primary treatment plants (86%, 80% and 92% by design capacity, respectively).

TABLE 6
ANNUAL AVERAGE LOADINGS OF BOD, SS AND TP TO THE MINOR BASINS, 1991

Legend

ADF = Average Daily Flow
1 tonne = 1,000 kg

Minor Basin	No. of STPs	Total ADF 1,000 m3/d	Average Concentration * mg/l			Total Average Daily Loadings Tonnes/day		
			BOD	SS	TP	BOD	SS	TP
ERIE	105	1090.1	11.5	12.0	0.5	12.5	13.0	0.56
HURON	115	450.2	13.1	11.3	0.6	5.9	5.1	0.25
JAMES BAY	33	52.0	26.4	25.7	1.9	1.4	1.3	0.10
LAKE WINNIPEG EAST	14	36.4	17.2	20.5	1.0	0.6	0.7	0.04
ONTARIO	78	3131.6	15.5	15.5	0.7	48.5	48.6	2.13
OTTAWA RIVER	50	647.2	53.4	41.9	1.2	34.5	27.1	0.81
ST. LAWRENCE	16	146.2	20.7	23.6	0.8	3.0	3.5	0.11
SUPERIOR	12	98.7	59.3	46.9	1.1	5.8	4.6	0.11
TOTAL	423	5,652.4				112.2	103.9	4.11

$$^{*}\text{Average Concentration (mg/l)} = \frac{\text{Total Average Daily Loadings (tonnes/d)}}{\text{Total ADF (1,000 m3/d)}} \times 1{,}000$$

FIGURE 4–A

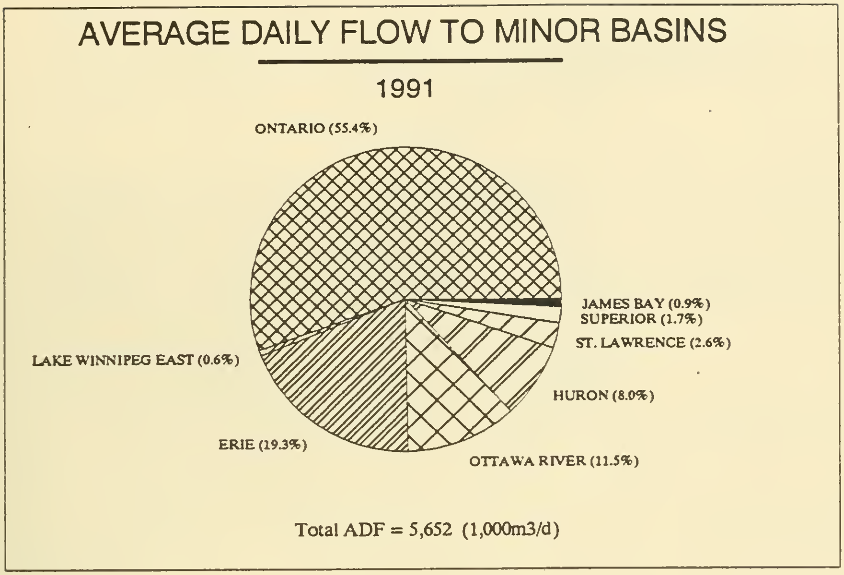


FIGURE 4–B

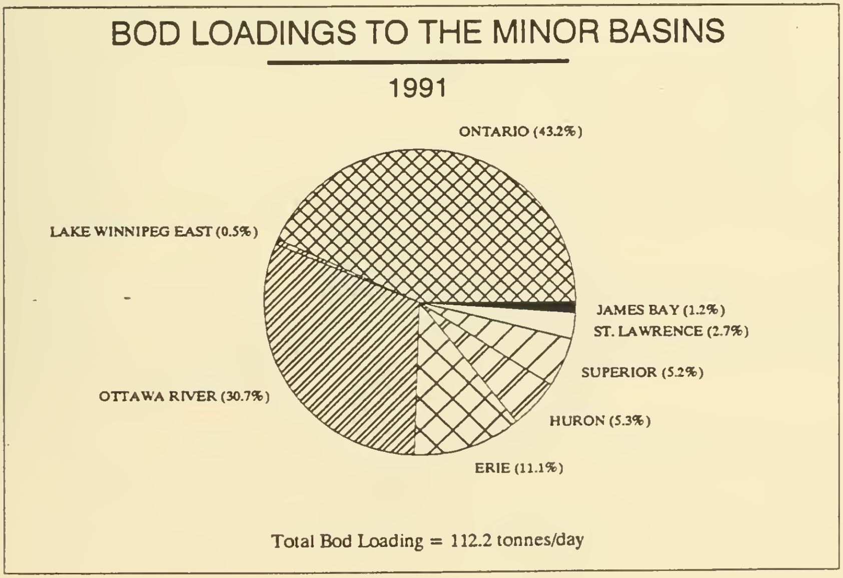


FIGURE 4–C

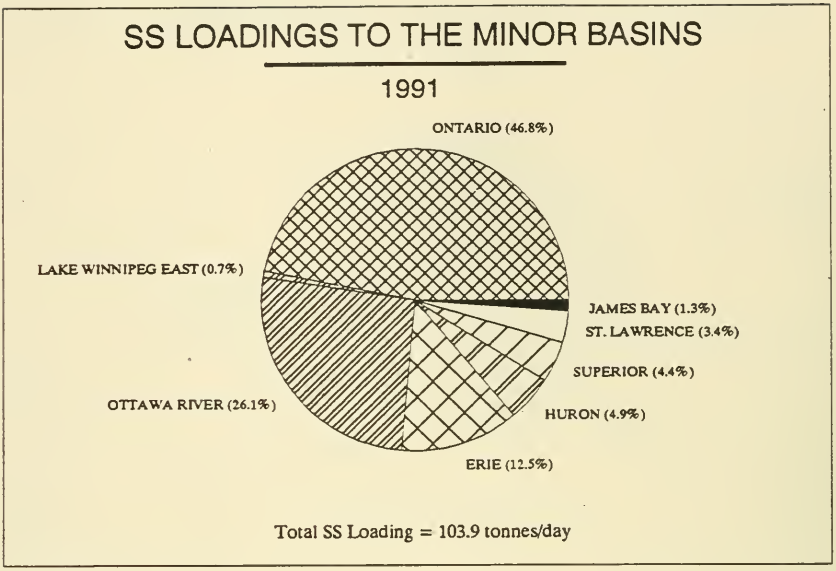
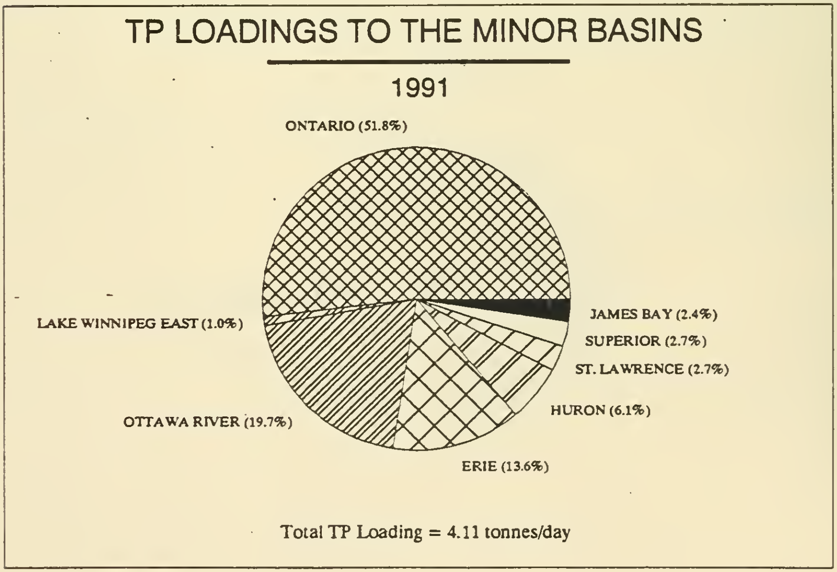


FIGURE 4–D



4.2 Bypasses

This report assesses only the bypasses that occurred within the boundary of a STP. Bypasses occurring in the sewer system, including pumping stations located outside the plant property, are considered as combined sewer overflows and are assessed by the MOEE regional staff on a case-by-case basis.

Bypasses can be classified into primary and secondary bypasses. A primary bypass is defined as the discharge of raw sewage subject to no treatment except grit removal and/or disinfection. A secondary bypass is defined as the discharge of sewage that has undergone solids removal at the primary clarifiers but bypassed the biological treatment process. In most cases, bypasses are disinfected before they are discharged.

Bypasses may occur for a number of reasons such as:

- a significant increase in hydraulic loading due to inflow and infiltration from a storm event or spring thaw
- operational problems, such as equipment breakdown
- population and/or industrial growth out-paced the design capacity of the STP

Bypassing of raw sewage are not allowed except in emergency situations. Emergency bypassing is necessary to protect basements from flooding, to prevent damage to equipment at treatment works or pumping facilities, or to prevent solids wash-out in the treatment works, during storm events or spring thaw.

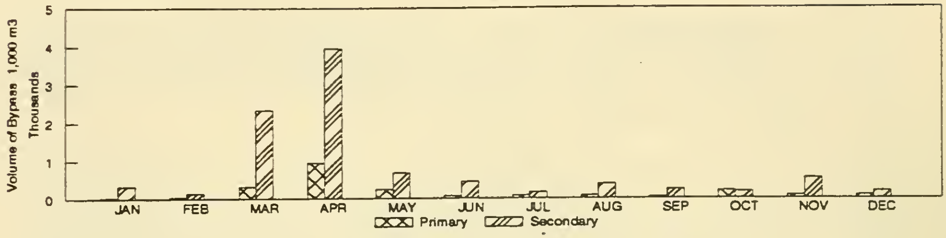
In 1991, 204 STPs reported bypass information to the MOEE and seventy-five (75) STPs had bypass occurrences. One hundred and sixty-nine (169) lagoons did not have to report bypass data because lagoons were designed with no bypass provision within the boundary of the plant. The bypass status for the remaining 52 STPs were not clear because they did not provide data to the Ministry. The seventy-five (75) STPs that had bypass occurrences are listed in Appendix D and more detail information is presented in Volume II Section B.

Figure-5 shows the distribution of the bypass volume, duration, number of STPs and number of days bypass occurred in a twelve month period. These graphs indicate that the bypass events mostly occur during the spring thaw months of March and April.

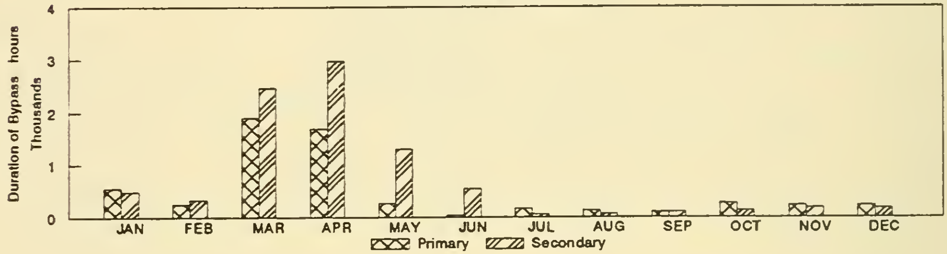
The total annual volume of primary bypass was 2.2 million m^3 and secondary bypass was 9.6 million m^3 which represent 0.11% and 0.46% of the total volume of effluent treated in 1991. The relationship between the plant bypass volume, design capacity and existing flow are summarized in Volume II, Section A.

FIGURE 5 : BYPASS – VOLUME, DURATION, NO. OF STPs & NO. OF DAYS

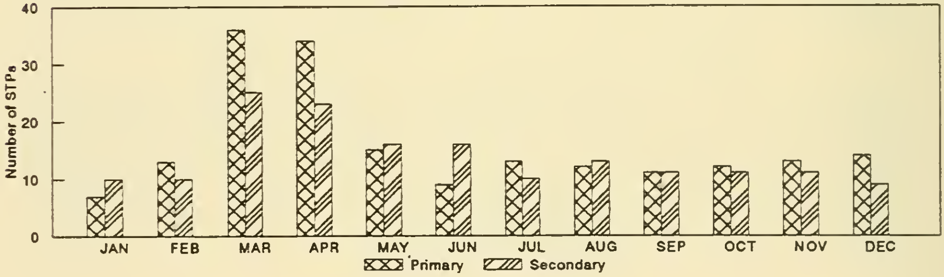
Bypass – Total Volume
1991



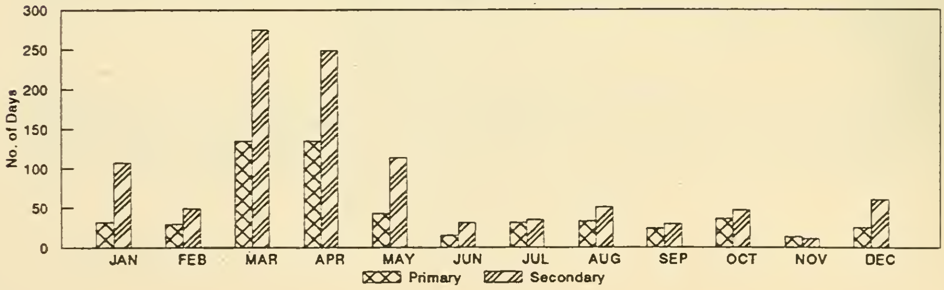
Bypass – Total Duration
1991



Bypass – Total Number of STPs
1991



Bypass – Total Number of Days
1991



5.0 HISTORICAL TRENDS

5.1 STP Compliance

The historical compliance data (1988 - 1991) for C of A assessment are presented in Table 7 and Figure 6. Caution should be exercised when reading Table 7 and Figure 6 because of the small number of STPs assessed against Cs of A in previous years. In 1988, 15 STPs were assessed whereas 62 STPs were assessed in 1991. The non-compliance rate reduced significantly from 28% in 1990 to 18% in 1991.

For a more accurate historical trend comparison, the performance of all STPs (including those with C of A limits) were also assessed against MOEE Policy effluent guidelines, as defined in Section 2.3. A total of 299 STPs (77%), of the 390 STPs actually assessed met the effluent guidelines in 1991. A summary of this assessment by region is given in Table 8 and shown in Figure 7.

Historical trend (1986 - 1991) on the number of STPs exceeding the MOEE Policy effluent guidelines are given in Table 9 and Figure 8. The number of STPs exceeding the guidelines diminished from 151 (42%) in 1986 to 93 (24%) in 1990 and 91 (25%) in 1991. The major improvement is due to improvement in TP removal. There are no improvements in BOD and SS removals.

5.2 Loading

BOD, SS, TP and hydraulic loading trends from 1987 to 1991 are presented in Figure 9. The BOD loadings discharged to the minor basins increased steadily from 1987 to 1991 while TP loadings decreased steadily in the same period. SS loadings increased from 1987 to 1990, but a significant reduction was achieved between 1990 and 1991. The sewage flow increased by 3.6% over 1990. The overall (flow-weighted) effluent BOD and SS concentration remained relatively constant at 18 - 20 mg/l levels, while effluent TP concentration improved gradually throughout the previous 3 years. The improvement in TP concentration and loading can be attributed to the tightening of TP limits from an *annual average* of 1.0 mg/l to a *monthly average* of 1.0 mg/l as a result of phosphorus load reduction targets identified in Annex 3 of the Canada - U.S. Agreement on Great Lakes Water Quality.

TABLE 7

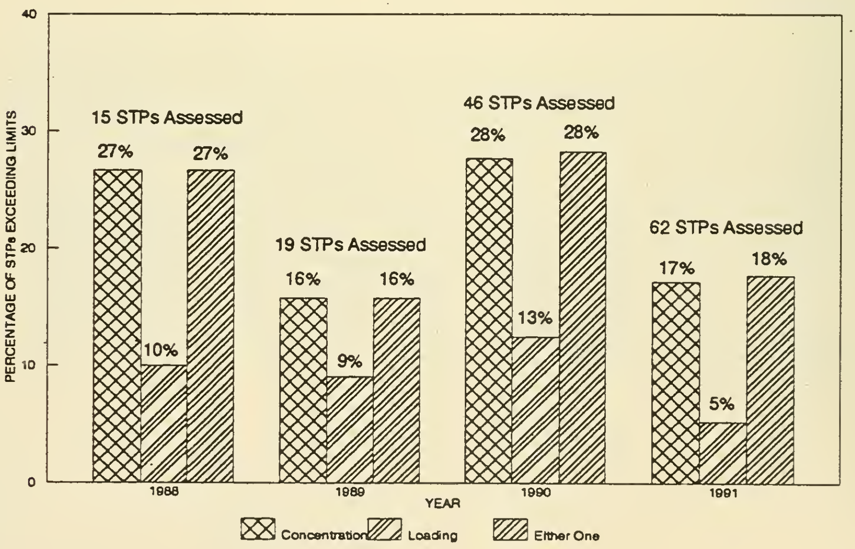
HISTORICAL DATA ON NUMBER OF SEWAGE TREATMENT PLANTS EXCEEDING C OF A LIMITS

Year	Number of STPs Assessed *			Number of STPs Exceeding Limits					
	concentration	loading	both	concentration	%	loading	%	Either	%
1988	15	10	15	4	27	1	10	4	27
1989	19	11	19	3	16	1	9	3	16
1990	47	32	46	13	28	4	13	13	28
1991	64	38	62	11	17	2	5	11	18

* based on the number of STPs actually assessed in that year.

FIGURE 6

HISTORICAL DATA ON NO. OF STPs EXCEEDING C OF A LIMITS



"Caution should be exercised when reading TABLE 7 and FIGURE 6 because of the small number of STPs assessed in previous years."

TABLE 8

SUMMARY OF ASSESSMENT AGAINST MOEE POLICY EFFLUENT GUIDELINES (ALL STPs), 1991

Region	Total Number of STPs	Number of STPs Assessed	Number of STPs Meeting Guidelines for All three Parameters	BOD *	SS *	TP +
SOUTHWEST	106	100	71	96	76	88
WEST CENTRAL	56	54	44	53	51	48
CENTRAL	80	74	61	72	71	63
SOUTHEAST	68	64	40	57	47	52
NORTHEAST	85	73	62	69	66	70
NORTHWEST	28	25	21	24	23	24
TOTAL	423	390	299	371	334	345
% COMPLIED			77%	95%	86%	88%

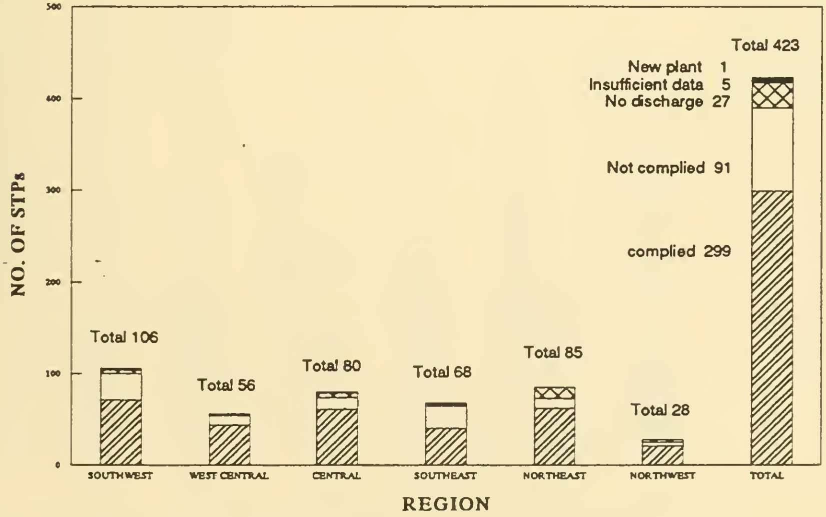
% COMPLIED is the percentage of plants complied with the parameter, as compared to the number of plants actually assessed.

* BOD and SS are assessed on an annual average basis.

+ TP is assessed on a monthly average basis; one or more months out of compliance meant the plant is out of compliance for the year.

FIGURE 7

ASSESSMENT AGAINST MOEE POLICY EFFLUENT GUIDELINES FOR ALL STPs, 1991



'NOT complied' means STPs that failed to meet the MOEE Policy guidelines for any one of the three parameters at any given time during the year.

TABLE 9

HISTORICAL DATA ON NUMBER OF SEWAGE TREATMENT PLANTS EXCEEDING MOEE POLICY EFFLUENT GUIDELINES

Year	Total Number of STPs Assessed	Number of STPs Exceeding Guidelines			
		ANY	BOD	SS	TP
1986	362	151	16	47	126
1987	371	138	17	53	100
1988	362	109	15	47	78
1989	364	108	16	41	76
1990	385	93	16	45	54
1991	390	91	22	60	44

FIGURE 8

HISTORICAL DATA ON NO. OF STPs EXCEEDING MOEE POLICY EFFLUENT GUIDELINES

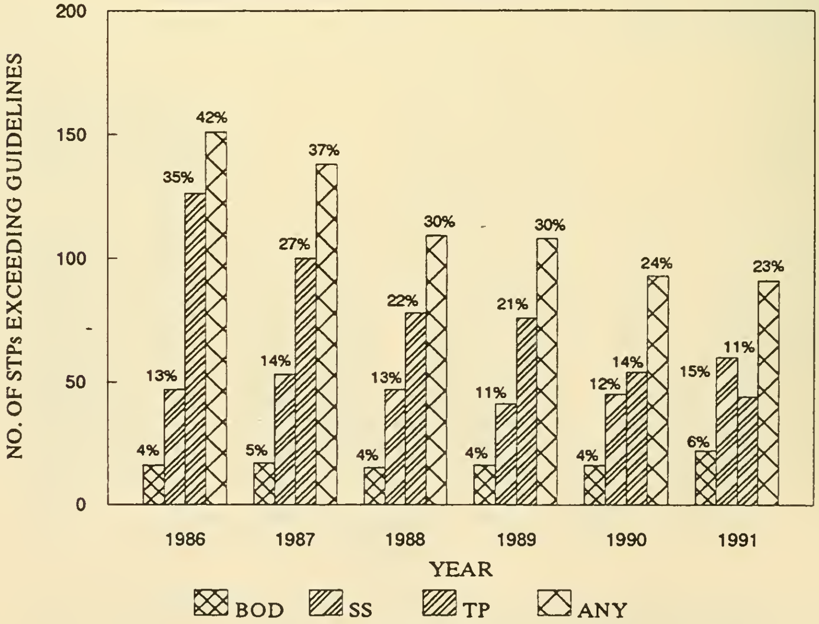
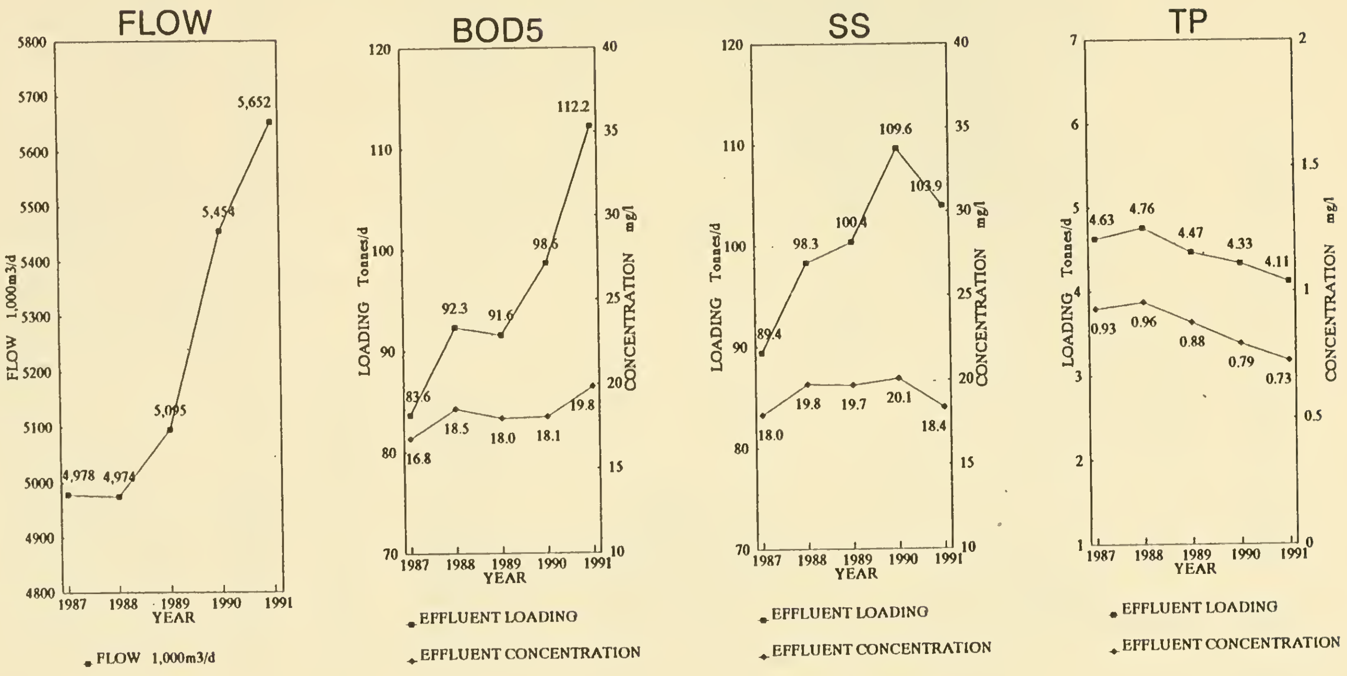


FIGURE 9

HISTORICAL LOADINGS AND EFFLUENT QUALITY TRENDS



6.0 STP OPERATION AND ABATEMENT

6.1 Operating Authority

STPs are operated by either the MOEE or the municipality where the plant is located. In 1991, 244 STPs were operated by the Ministry and 179 STPs were operated by municipalities. In general, the Ministry operates facilities for small municipalities, while the larger facilities are operated by municipalities themselves. Consequently, the municipally operated plants handled about 4 times the design flow as the Ministry operated plants. Table 10 shows the treatment types and the number of plants operated by the Ministry and municipalities.

TABLE 10: NUMBER OF STPs OPERATED BY MOEE OR MUNICIPALITY IN 1991

Treatment Type	Number of STPs Operated by		Total
	MOEE	Municipality	
Primary	10	18	28
Secondary	102	83	188
Tertiary	18	18	36
Lagoons	112	57	169
Septic System	2	3	5
Total	244 (58%)	179 (42%)	423

A description of different treatment types is given in Section 7.2. A more detailed breakdown of the number of STPs by treatment processes, e.g., conventional activated sludge, contact stabilization, lagoons, etc., is provided in Table 11.

6.2 Abatement Program

Starting in 1989, the MOEE regional staff inspect all STPs on a regular basis. An inspection report is issued in each case to inform the operating authority and the Ministry abatement staff of any deficiencies.

If significant abatement measures are required, the Ministry ensures that the necessary actions are taken by the operating authority within a specified period. Failure of the operating authority to comply with the recommended abatement actions may result in the operating authority being investigated by the Ministry's Investigations and Enforcement Branch and prosecuted by the Ministry's Legal Services Branch, if necessary.

TABLE 11

SUMMARY OF STP AVERAGE DAILY FLOW AND DESIGN CAPACITY BY TREATMENT TYPES, 1991

TREATMENT TYPE	NUMBER OF STPs			DESIGN CAPACITY 1,000 m3/d			AVERAGE DAILY FLOW 1,000 m3/d		
	M.O.E.	MUNICIPAL	TOTAL	MOEE	MUNICIPAL	TOTAL	MOEE	MUNICIPAL	TOTAL
PRIMARY TREATMENT	10	18	28	119.2	933.1	1052.3	76.2	942.2	1018.4
SECONDARY TREATMENT									
Contact Stabilization	6	6	12	23.1	27.0	50.1	20.7	17.7	38.4
Conventional Activated Sludge	27	50	77	939.1	3164.3	4103.4	786.9	2893.4	3680.3
Extended Aeration/Contact Stablization	2	1	3	1.3	18.2	19.5	1.0	10.2	11.2
Extended Aeration	54	18	72	107.3	66.5	173.8	100.4	50.0	150.4
High Rate	3	2	5	18.7	77.1	95.8	14.2	70.2	84.4
Modified Activated Sludge	1	0	1	12.1	0.0	12.1	10.3	0.0	10.3
Oxidation Ditch	8	1	9	9.0	6.5	15.5	6.0	4.6	10.6
Rotating Biological Contactor	1	1	2	0.5	68.2	68.7	0.2	56.9	57.1
Trickling Filter	0	2	2	0.0	35.0	35.0	0.0	27.6	27.6
Sub-total	102	81	183	1111.1	3462.7	4573.8	939.7	3130.6	4070.3
TERTIARY TREATMENT									
Contact Stabilization + Effluent Filtration	0	1	1	0.0	1.8	1.8	0.0	2.1	2.1
Conventional Activated Sludge + Effluent Polishing	5	9	14	68.6	192.7	261.3	49.4	158.7	208.1
Extended Aeration + Effluent Filtration	0	1	1	0.0	4.1	4.1	0.0	1.5	1.5
Extended Aeration + Effluent Polishing	12	7	19	32.2	59.4	91.6	15.3	10.4	25.7
Oxidation Ditch + Effluent Polishing	1	0	1	2.0	0.0	2.0	1.6	0.0	1.6
Sutton Process	0	2	2	0.0	3.4	3.4	0.0	2.4	2.4
Sub-total	18	20	38	102.8	261.4	364.2	66.3	175.1	241.4
LAGOONS									
Aerated Cell plus Lagoon	14	7	21	40.5	21.5	62.0	32.1	14.3	46.4
Aerated Lagoon	4	4	8	8.5	453.7	462.2	45.2	9.3	54.5
Conventional Lagoon Annual Discharge	10	3	13	4.0	15.4	19.4	100.8	0.9	101.7
Conventional Lagoon Continuous Discharge	4	9	13	6.9	29.8	36.7	9.3	21.5	30.8
Conventional Lagoon Seasonal Discharge	74	29	103	68.3	152.4	220.7	48.2	34.1	82.3
Exfiltration Lagoon	4	5	9	4.2	4.2	8.4	2.2	3.6	5.8
Lagoon and Spray	2	0	2	0.9	0.0	0.9	0.6	0.0	0.6
Sub-total	112	57	169	133.3	677.0	810.3	238.6	83.7	322.3
COMMUNAL SEPTIC SYSTEMS	2	3	5	0.4	1.0	1.4	0.1	0.3	0.5
TOTAL	244	179	423	1,467	5,335	6,802	1,321	4,331	5,652

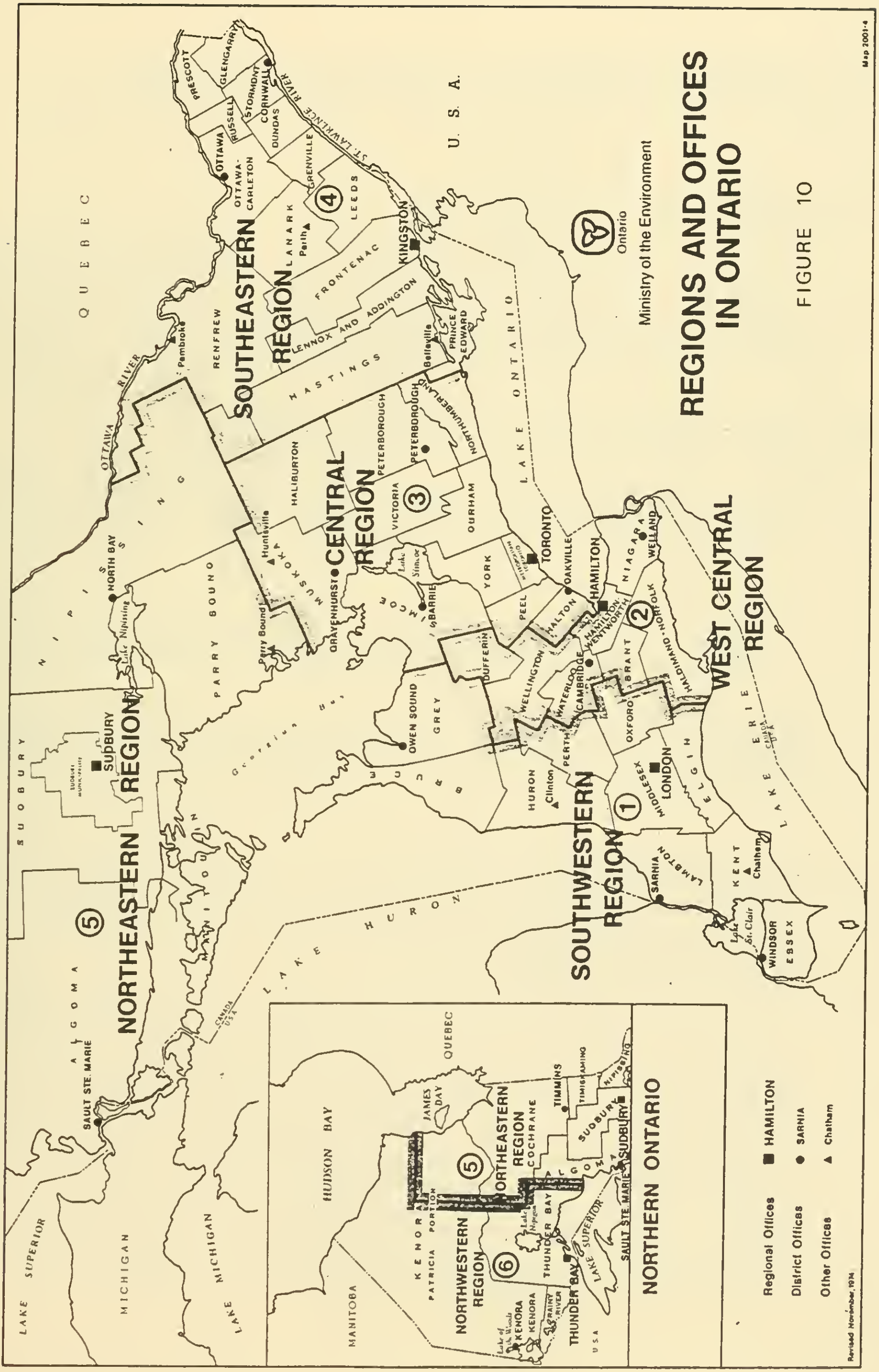
6.3 Enforcement

Plant operational problems, environmental degradation and other incidences are documented by MOEE regional staff in Occurrences Reports. Where contravention of legislation is suspected, the reports are referred to the Investigations and Enforcement Branch (IEB) for investigation. Based on the findings of the investigation, charges would be laid if the evidence indicate, on reasonable and probable grounds, that an offence has been committed. Offences are usually in respect of the Environmental Protection Act and the Ontario Water Resources Act.

In 1991, IEB investigated 2 suspected infractions, and no charge was laid. In 1990, a prosecution was brought against the Regional Municipality of Sudbury for discharge of a lagoon contents. This was dismissed at the trial, however, an appeal was lodged by the Ministry against this decision in 1991. The Court of Appeal overturned the decision, finding the defendant guilty of violating the Certificate of Approval. These enforcement activities are summarised under Table 12.

TABLE 12: ENFORCEMENT ACTIVITIES AGAINST MUNICIPAL SEWAGE TREATMENT PLANTS IN 1991

Municipality	Offense Description	Disposition
NO CHARGE WAS LAID IN 1991		
DISPOSITION FOR CASES UNDER APPEAL IN 1990		
Regional Municipality of Sudbury, NE Region	Illegal discharge of lagoon contents	Defendant found guilty of violation of Certificate of Approval upon appeal



REGIONS AND OFFICES IN ONTARIO

FIGURE 10

7.0 SEWAGE TREATMENT PLANT SECTOR PROFILE

7.1 Geographic Distribution

Ministry of Environment and Energy divides the province into six geographic regions as shown in Figure 10. The distribution of the 423 STPs among the 6 regions and the proportion of sewage flows treated by each region are shown in Figure 11. Southwestern Region has the most number of STPs (25%) while Central Region handles the most flows, 45% of the total flow.

7.2 Distribution of STPs by Treatment Types

For the purpose of this report, municipal sewage treatment plants were broadly classified into five (5) major treatment types, namely, Primary, Secondary, Tertiary, Lagoons, and Communal Septic Systems.

Primary Treatment is the treatment of sewage by mechanical screening and sedimentation in primary clarifiers only. This process can remove a high percentage of suspended solids but little colloidal and dissolved organic matters.

Secondary Treatment is the treatment of sewage by mechanical aeration process in which biological degradation of soluble organic matter takes place, followed by solids settling in secondary clarifiers. Primary treatment is provided in most secondary plants.

Tertiary Treatment is the additional treatment provided after secondary treatment to achieve a higher degree of BOD_5, SS and TP removal. In Ontario, tertiary treatment is usually provided by sand filtration or a polishing lagoon. Guelph WPCP is the only one where tertiary treatment is provided by the rotating biological contactor (RBC) process.

Lagoons treat sewage by biological process in one or a series of relatively shallow basin(s). The amount of air required for biological degradation of organic matter is provided by wind and the presence of algae in the lagoon. Mechanical aeration devices are used in a small number of lagoons to supplement the dissolved oxygen requirement. Since the rate of air supply by wind and algae is very slow as compared to the mechanical equipments used in secondary plants, a longer retention time (30 days or longer as compared to 24 hours or less for secondary plants) is needed to provide satisfactory removal of soluble contaminants such as BOD_5. Lagoons are widely used in small communities because of their relatively low construction and operating costs. However, because of the large surface area requirement, they are not used in urban areas or large municipalities.

Communal Septic Systems consist of a single storage settling tank in which organic solids are settled and decomposed by anaerobic bacterial action. Communal septic systems are used in small communities only. Effluent is percolated through tiles installed beneath the earth surface.

Phosphorus removal is a process in which either iron or aluminium solution is added to the sewage to reduce the effluent TP concentration. TP removal is provided in 293 (69%) of the 423 STPs in Ontario.

A major proportion of the sewage generated in Ontario is treated by biological processes (82% by volume) - Secondary treatment (72%), Tertiary treatment (4%) and Lagoons (6%). Primary treatment and Septic Systems account for 18% and 0.01% by volume, respectively. Figure 12-A shows the proportion of sewage treated by the different treatment types. Figure 12-B to Figure 12-D show the proportion of BOD, SS and TP loadings discharged by the different treatment types. The 28 (7% by number) primary plants treated 18% of the sewage flow but contributed 47% of the BOD loadings, 39% of the SS loadings and 28% of the TP loadings. Table 11 gives a summary of the Average Daily Flow and Design Flow by the major treatment types.

7.3 EFFECTIVENESS OF DIFFERENT TREATMENT TYPES

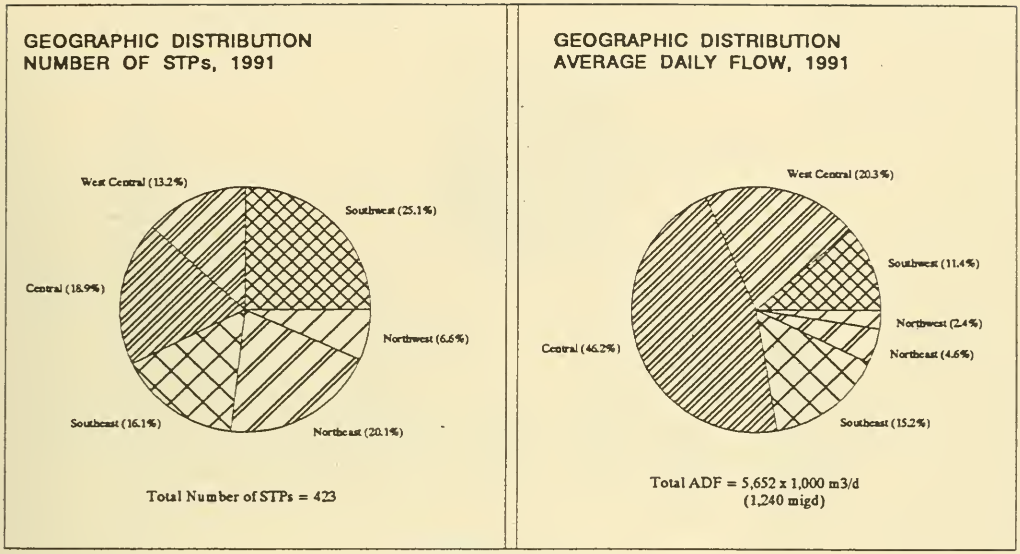
The quality of effluent achievable by a STP depends on the type of treatment process used and how well the plant is designed, constructed, maintained and operated. When properly operated, the plants with a higher degree of treatment produce better effluent quality. The capital and operation/maintenance costs also increase as the degree of treatment provided increases.

Figure 13-A & 13-B show the average effluent quality and the percentage removal for the five major treatment types. Tertiary treatment provides the highest degree of treatment, followed by secondary treatment, lagoons, and communal septic systems, with primary treatment provides the lowest degree of treatment. Not all STPs are required to remove TP. STPs which practise TP removal achieve a higher percentage removal of BOD and SS than STPs which do not practise TP removal, for the same treatment type.

Table 13 presents the statistics on effluent quality and compliance status achieved by the five major treatment processes. The effluent concentrations presented in the table are based on monthly averages. The analysis shows that the Tertiary and Secondary treatments provide a better and more consistent effluent quality as well as a higher compliance rate. SS removal appeared to vary considerably between the 141 lagoons assessed and resulted in a significant number of non-compliance. Since the TP limit is based on *monthly average* while the BOD and SS limits are based on *annual averages* in most cases, the TP limit is considered significantly more stringent. Consequently, the non-compliance rate for TP is higher than for BOD and SS.

Table 14 summarizes the number of non-compliance STPs by design capacity and treatment types. The summaries are illustrated in Figure 14-A to Figure 14-E. Tertiary plants had the highest compliance rate of 88% while Primary plants had the lowest rate of 37%. The compliance rates for the primary plants and communal septic systems may be biased by the small number of plants in those categories. Table 14 further shows that smaller Primary STPs were more prone to non-compliance than larger Primary STPs, whereas, the compliance rates for small and large Secondary STPs were similar. There were insufficient number of tertiary STPs, lagoons and communal septic systems in all three size categorise for a similar comparison.

FIGURE 11

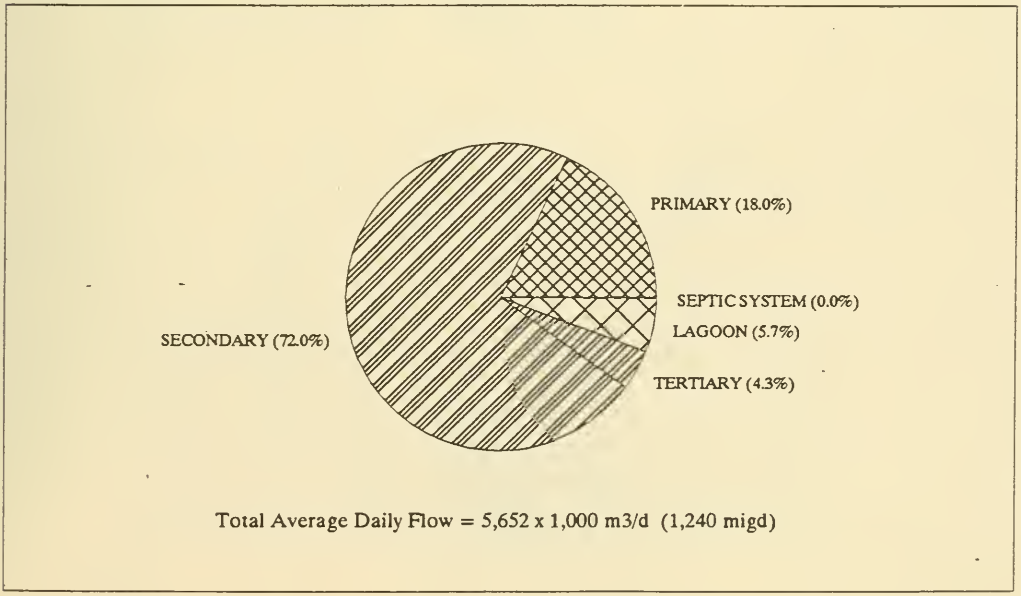

GEOGRAPHIC DISTRIBUTION
NUMBER OF STPs, 1991

Total Number of STPs = 423

GEOGRAPHIC DISTRIBUTION
AVERAGE DAILY FLOW, 1991

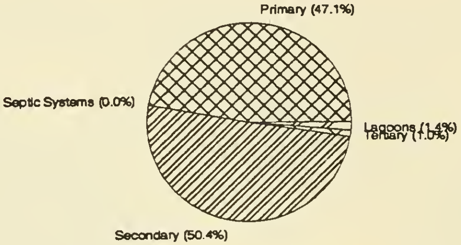
Total ADF = 5,652 x 1,000 m3/d
(1,240 migd)

FIGURE 12–A
PROPORTION OF SEWAGE FLOW (ADF)
TREATED BY DIFFERENT TREATMENT TYPES, 1991



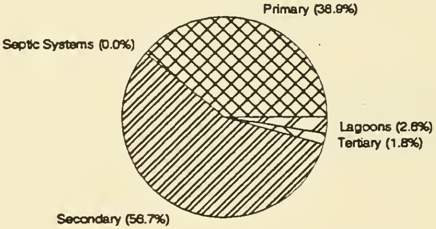
Total Average Daily Flow = 5,652 x 1,000 m3/d (1,240 migd)

FIGURE 12–B BOD LOADINGS DISCHARGED BY DIFFERENT TREATMENT TYPES, 1991



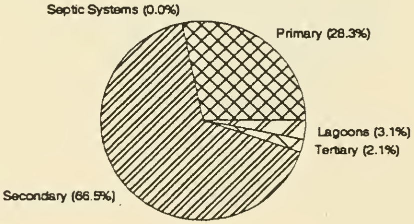
Total BOD Loadings = 112.2 tonnes/day

FIGURE 12–C SS LOADINGS DISCHARGED BY DIFFERENT TREATMENT TYPES, 1991



Total SS Loadings = 103.9 tonnes/day

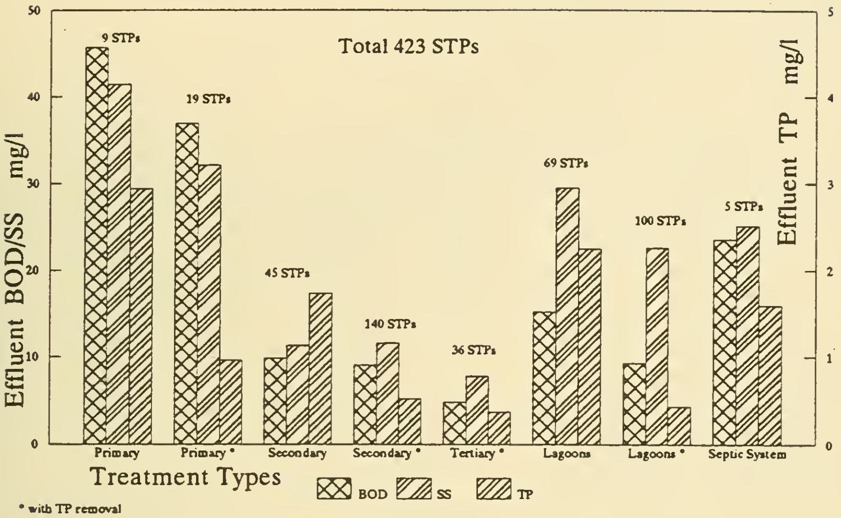
FIGURE 12–D TP LOADINGS DISCHARGED BY DIFFERENT TREATMENT TYPES, 1991



Total TP Loadings = 4.11 tonnes/day

FIGURE 13–A

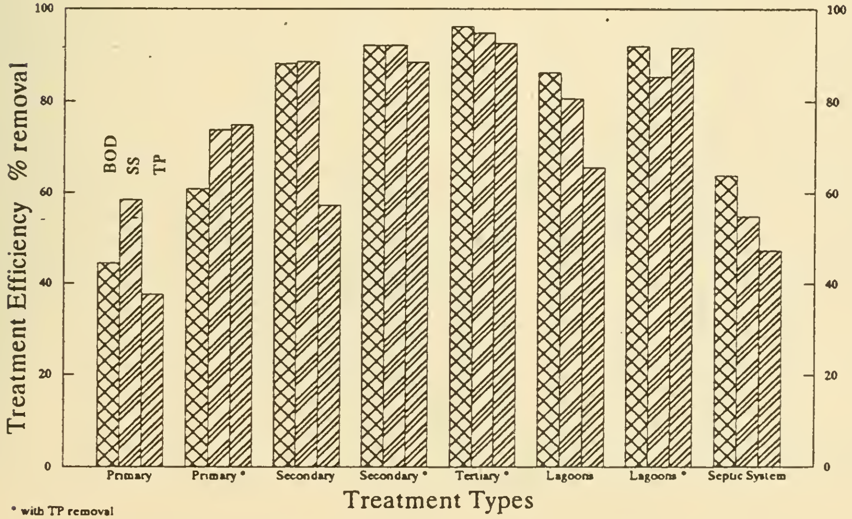
AVERAGE EFFLUENT QUALITY FOR
DIFFERENT TREATMENT TYPES, 1991



* with TP removal

FIGURE 13–B

AVERAGE EFFICIENCY FOR
DIFFERENT TREATMENT TYPES, 1991



* with TP removal

TABLE 13
STATISTICAL ANALYSIS OF EFFLUENT QUALITY AND PERCENTAGE OF NON-COMPLIANCE FOR DIFFERENT TREATMENT TYPES, 1991

BOD CONCENTRATION AND ASSESSMENT

Treatment Types	MONTHLY EFFLUENT CONCENTRATION				COMPLIANCE STATUS		
	Maximum mg/l	Minimum mg/l	Average mg/l	Standard Deviation	STPs Assessed	STPs * Failed	STPs Failed %
Primary	339.00	0.10	40.00	27.80	27	6	22.2%
Secondary	121.00	0.20	8.70	9.90	181	10	5.5%
Tertiary	97.00	0.20	5.00	9.30	35	1	2.9%
Lagoons	174.00	0.20	13.10	13.10	141	5	3.5%
Septic Systems	137.50	0.80	23.70	30.70	4	0	0.0%

SS CONCENTRATION AND ASSESSMENT

Treatment Types	MONTHLY EFFLUENT CONCENTRATION				COMPLIANCE STATUS		
	Maximum mg/l	Minimum mg/l	Average mg/l	Standard Deviation	STPs Assessed	STPs * Failed	STPs Failed %
Primary	113.00	4.50	34.90	18.40	27	13	48.1%
Secondary	287.00	0.10	10.90	14.50	181	11	6.1%
Tertiary	330.00	0.40	7.60	24.70	35	2	5.7%
Lagoons	690.00	0.50	22.80	39.10	141	32	22.7%
Septic Systems	110.00	0.40	25.20	20.70	4	2	50.0%

TP CONCENTRATION AND ASSESSMENT

Treatment Types	MONTHLY EFFLUENT CONCENTRATION				COMPLIANCE STATUS		
	Maximum mg/l	Minimum mg/l	Average mg/l	Standard Deviation	STPs Assessed	STPs * Failed	STPs Failed %
Primary	32.31	0.10	1.59	2.07	18	9	50.0%
Secondary	7.15	0.01	0.81	0.84	138	23	16.7%
Tertiary	6.25	0.04	0.37	0.54	34	2	5.9%
Lagoons	39.30	0.02	1.20	2.27	89	10	11.2%
Septic Systems	6.73	0.01	1.60	1.47	1	0	0.0%

* FAILED means failed to meet C of A limits or MOEE Policy guidelines that the plant is required to meet.

TABLE 14: NUMBER OF STPs EXCEEDING CONCENTRATION REQUIREMENTS BY DESIGN CAPACITY AND TREATMENT TYPES, 1991

DESIGN CAPACITY	TREATMENT TYPE														
	Primary			Secondary			Tertiary			Lagoons			Septic Systems		
Non-complying Plants															
> 45.4 (1000 m3/d)	2	(7)	29%	7	(21)	33%	0	(2)	0%	0	(1)	0%	0	(0)	0%
4.54 - 45.4 (1000 m3/d)	8	(11)	73%	11	(63)	17%	2	(13)	15%	4	(13)	31%	0	(0)	0%
< 4.54 (1000 m3/d)	7	(9)	78%	13	(98)	13%	2	(20)	10%	33	(125)	26%	2	(4)	50%
Total Non-complying	17		63%	31		17%	4		12%	37		27%	2		50%
Complying Plants	10		37%	151		83%	31		88%	102		73%	2		50%

( ) = the number of STPs in this catagory.
1 migd = million imperial gallon per day
= 4.54 x 1,000 m3/d

Assessment Criteria:
C of A STPs used C of A limits
Non C of A STPs used MOEE Policy Effluent Guidelines

FIGURE 14-A

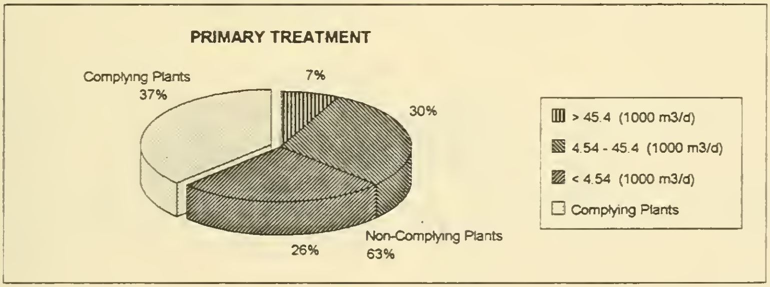
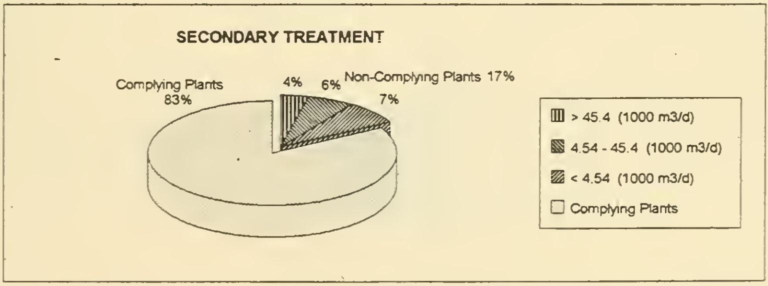


FIGURE 14-B



... continued

NUMBER OF STPs EXCEEDING CONCENTRATION REQUIREMENTS BY DESIGN CAPACITY AND TREATMENT TYPES

FIGURE 14-C

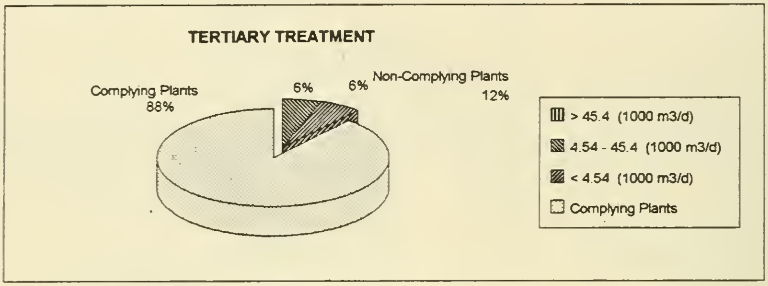


FIGURE 14-D

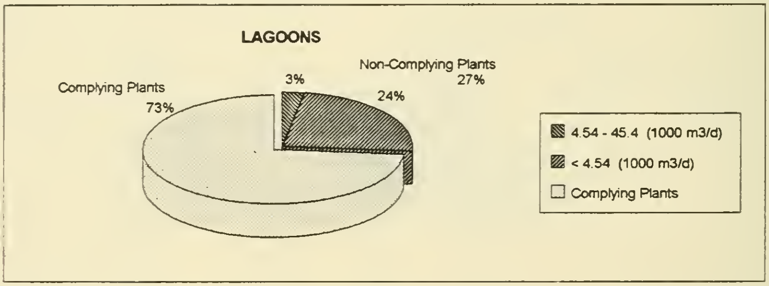
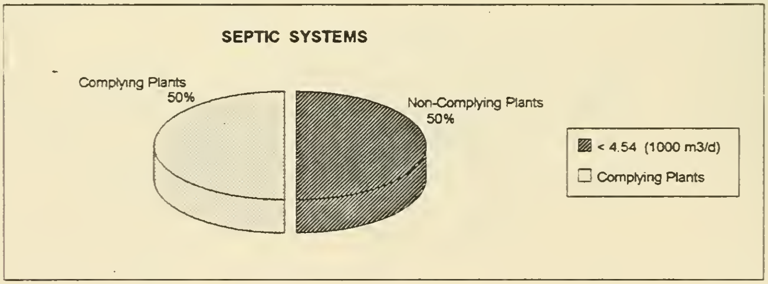


FIGURE 14-E



8.0 INQUIRIES

Inquiries about individual STPs may be directed to the corresponding Ministry Regional Offices or District Offices. The addresses and phone numbers of the six regions and their district offices are listed in Appendix E.

Volume II of this report, **"Data for Individual Plant Performance"**, is available separately in a computer diskette. Copies of both volumes of this report are available from:

Public Information and Inquiry Services
Ministry of Environment & Energy
135 St. Clair Avenue West, 2/F
Toronto, Ontario M4V 1P5

Phone : (416)-323-4321
Fax : (416)-323-4643

9.0 REFERENCE

Please contact the Ministry's Public Information Office listed above for other information on industrial discharges and environmental issues, such as the Ministry's **"Report on the 1991 Industrial Direct Discharges in Ontario"**.

GLOSSARY OF TERMS

ADF	average daily flow, expressed as 1,000 m^3/day.
assessment	evaluation of sewage treatment plant performance by comparing the effluent quality against C of A limits or MOEE Policy Effluent Guidelines.
BOD_5	Biochemical Oxygen Demand, a measurement of the amount of oxygen required to oxidize the organic matters in a sewage sample in a 5 day period, expressed as mg/l (see Section 2.1 for the significance of the parameter).
bypass, duration	number of hours bypass occurred in a sewage treatment plant.
bypass, occurence	number of days bypass occurred in a sewage treatment plant.
bypass, primary	the discharge of raw sewage subject to no treatment except grit removal and/or chlorination.
bypass, secondary	the discharge of sewage that has undergone solids removal at the primary clarifiers of a STP but bypassed the biological treatment process.
Certificate of Approval (C of A)	a legal document issued by the MOEE to signify the approval of the construction and operation of a STP.
C of A Plants	STPs that have a Certificate of Approval (C of A) with non-compliance effluent limits specified in the C of A.
concentration limit	a preset limit in terms of the concentration of the parameter that the plant effluent shall not exceed.
communal septic system	a single storage tank in which the organic solids are settled and decomposed by anaerobic bacteria action.
compliance	meeting the effluent discharge guidelines, limits and/or requirements.
Control Document	an order issued by the Investigation and Enforcement Branch (IEB) of the MOEE to a STP with specific compliance action.
design capacity	the hydraulic capacity of a STP that is designed to handle, expressed as 1,000 m^3/day.
effluent	the treated sewage discharged to a receiving water body.

GLOSSARY OF TERMS - continued

insufficient data	a STP is deemed to have insufficient data for assessment if it missed reporting 4 or more months of data in a 12 month period for a continuous discharge plant, or it missed reporting any effluent concentration data and/or volume/duration of discharge for a non-continuous discharge plant such as seasonal lagoon.
lagoon	a constructed earthen basin(s), in which solids are settled and soluble organic matters are biologically decomposed.
loading	the amount of waste discharged to the receiving water body, expressed as kg/d or tonne/d.
loading Limit	a preset limit in terms of loading of the parameter that the plant discharge shall not exceed.
minor basins	receiving water bodies within the Great Lakes and broadly classified into 8 minor basins.
Municipality	means the corporation of a county, metropolitan area, regional area, district area, city, town, village, township or improvement district and includes a local board thereof and a board, commission or other local authority exercising any power with respect to municipal affairs or purposes, including school purposes, in an unorganized township or unserveyed territory.
MOEE	the Ontario Ministry of Environment and Energy
MOEE Policy Effluent Guidelines	the effluent guidelines (BOD and SS) in Table 1 of MOEE Policy 08-01 and the effluent requirement for TP in Canada-U.S. Agreement on Great Lakes Water Quality 1983.
non-C of A Plants	STPs that do not have a Certificate of Approval (C of A), or plants with a C of A but do not have non-compliance effluent concentration limits specified in the C of A.
non-compliance	not meeting the effluent discharge guidelines, limits and/or requirements.
Operation Authority	the agency (either MOEE or municipality) who is in charge of the operation of the STP.
primary treatment	removal of solids in the raw sewage by mechanical screening or sedimentation in a primary clarifiers.

GLOSSARY OF TERMS - continued

Province	the Province of Ontario.
raw sewage	sewage received at the STP. Raw sewage can contain sanitary sewage, commercial and industrial liquid wastes, ground water infiltration and run-offs from road surfaces.
secondary treatment	treatment in addition to primary treatment. Secondary treatment comprises biological degradation of soluble organic matters, followed by solids settling in secondary clarifier.
self-monitoring program	a program by which the Operation Authority is required to collect and analyze effluent samples periodically to monitor the performance of the STP, and to report the sample data to the MOEE.
SS	suspended solids, expressed as mg/l (see Section 2.1 for the significance of this paramter).
STP Sewage Treatment Plant	a facility in which sewage is purified to the standard stipulated by the MOEE.
tertiary treatment	treatment in addition to secondary treatment. In Ontario, tertiary treatment comprises sand-filtration or effluent polishing in a lagoon (except in Guelph WPCP, see Section 7.2, page 34).
TP	total phosphorus, the amount of dissolved and particulate, organic and inorganic phosphorus in a sewage sample.

APPENDIX A

SUMMARY OF

STP PERFORMANCE

AGAINST

CERTIFICATE OF APPROVAL LIMITS

1991

APPENDIX A

SUMMARY OF STP PERFORMANCE, 1991
AGAINST CERTIFICATE OF APPROVAL LIMITS

Legend

*	non-compliance for that year
Y	compliance for that year
ID	insufficient data for assessment
ND	no discharge in that year
NA	not applicable
NR	not required for assessment
NCA	not assessed by C of A in that year

REGION: 1. SOUTHWESTERN

COMPLYING PLANTS

Plant Name	Operation Authority	Compliance Status										Remedial Program	Anticipated Compliance
		1991						1990	1989	1988	1987		
		concentration			loading								
		BOD	SS	TP	BOD	SS	TP						
ALVINSTON WPCP	MINISTRY	Y	Y	Y	NR	NR	NR	Y	NCA	NCA	NCA	NO	
AYLMER LAGOON	MINISTRY	Y	Y	Y	NR	NR	NR	Y	Y	N	NCA	NO	
CRAIGLEIGH WPCP	MUNICIPAL	Y	Y	Y	Y	Y	Y	Y	Y	Y	NCA	YES	
DUNDALK LAGOON	MINISTRY	Y	Y	Y	Y	Y	Y	Y	NCA	NCA	NCA	NO	
EXETER LAGOON	MUNICIPAL	Y	Y	Y	NR	NR	NR	ID	NCA	NCA	NCA	NO	
GREENWAY WPCP	MUNICIPAL	Y	Y	Y	NR	NR	NR	NCA	NCA	NCA	NCA	YES	92
LITTLE RIVER WPCP	MUNICIPAL	Y	Y	Y	NR	NR	NR	NCA	NCA	NCA	NCA	NO	
OXFORD WPCP	MUNICIPAL	Y	Y	Y	NR	NR	NR	NCA	NCA	NCA	NCA	NO	
PORT BURWELL WPCP	MINISTRY	Y	Y	Y	Y	Y	Y	Y	Y	Y	NCA	NO	
POTTERSBURG WPCP	MUNICIPAL	Y	Y	Y	Y	Y	Y	NCA	NCA	NCA	NCA	NO	
ST THOMAS WPCP	MUNICIPAL	Y	Y	Y	NR	NR	NR	Y	Y	Y	NCA	NO	
TAVISTOCK LAGOON	MINISTRY	Y	Y	Y	NR	NR	NR	Y	N	NCA	NCA	NO	
WHEATLY WPCP	MINISTRY	Y	Y	Y	Y	Y	Y	Y	Y	Y	NCA	NO	

NON-COMPLYING PLANTS AND PLANTS WITH INSUFFICIENT DATA FOR ASSESSMENT

Plant Name	Operation Authority	Compliance Status										Remedial Program	Anticipated Compliance
		1991						1990	1989	1988	1987		
		concentration			loading								
		BOD	SS	TP	BOD	SS	TP						
AMHERSTBURG WPCP	MINISTRY	ID	ID	ID	NR	NR	NR	ID	Y	Y	NCA	YES	9201
CHATHAM WPCP	MUNICIPAL	Y	N	Y	Y	Y	Y	N	NCA	NCA	NCA	NO	
KINGSVILLE LAGOON	MUNICIPAL	ID	ID	ID	NR	NR	NR	N	ID	N	NCA	YES	9201

APPENDIX A

SUMMARY OF STP PERFORMANCE, 1991 AGAINST CERTIFICATE OF APPROVAL LIMITS

REGION: 2. WEST CENTRAL

Legend

•	non-compliance for that year
Y	compliance for that year
ID	insufficient data for assessment
ND	no discharge in that year
NA	not applicable
NR	not required for assessment
NCA	not assessed by C of A in that year

COMPLYING PLANTS

Plant Name	Operation Authority	Compliance Status										Remedial Program	Anticipated Compliance
		1991						1990	1989	1988	1987		
		concentration			loading								
		BOD	SS	TP	BOD	SS	TP						
ANGER AVE.WPCP	MUNICIPAL	Y	Y	Y	NR	NR	NR	Y	NCA	NCA	NCA	NO	
CALEDONIA WPCP	MINISTRY	Y	Y	Y	NR	NR	NR	N	NCA	NCA	NCA	NO	
ELMIRA WPCP (COMBINED FLOW)	MINISTRY	Y	Y	Y	Y	Y	Y	Y	Y	Y	NCA	NO	
GUELPH WPCP	MUNICIPAL	Y	Y	Y	NR	NR	NR	NCA	NCA	NCA	NCA	NO	
PORT DALHOUSIE WPCP	MUNICIPAL	Y	Y	Y	Y	Y	Y	N	NCA	NCA	NCA	NO	
PORT WELLER WPCP	MUNICIPAL	Y	Y	Y	NR	NR	NR	Y	N	Y	NCA	NO	
STAMFORD WPCP	MUNICIPAL	Y	Y	Y	Y	Y	Y	Y	NCA	NCA	NCA	NO	
WELLAND WPCP	MUNICIPAL	Y	Y	Y	NR	NR	NR	N	NCA	NCA	NCA	NO	

NON-COMPLYING PLANTS AND PLANTS WITH INSUFFICIENT DATA FOR ASSESSMENT

Plant Name	Operation Authority	Compliance Status										Remedial Program	Anticipated Compliance
		1991						1990	1989	1988	1987		
		concentration			loading								
		BOD	SS	TP	BOD	SS	TP						
BIGGAR LAGOON	MUNICIPAL	Y	N	NR	NR	NR	NR	NCA	NCA	NCA	NCA	NO	
HESPELER WPCP	MINISTRY	N	N	N	NR	NR	NR	NCA	NCA	NCA	NCA	YES	9206
PALMERSTON WPCP	MINISTRY	ID	ID	ID	NR	NR	NR	NCA	NCA	NCA	NCA	NO	
WATERLOO WPCP	MINISTRY	N	N	Y	NR	NR	NR	NCA	NCA	NCA	NCA	NO	

APPENDIX A

SUMMARY OF STP PERFORMANCE, 1991
AGAINST CERTIFICATE OF APPROVAL LIMITS

Legend

•	non-compliance for that year
Y	compliance for that year
ID	insufficient data for assessment
ND	no discharge in that year
NA	not applicable
NR	not required for assessment
NCA	not assessed by C of A in that year

REGION: 3. CENTRAL

COMPLYING PLANTS

Plant Name	Operation Authority	Compliance Status										Remedial Program	Anticipated Compliance
		1991						1990	1989	1988	1987		
		concentration			loading								
		BOD	SS	TP	BOD	SS	TP						
BARRIE WPCP	MUNICIPAL	Y	Y	Y	NR	NR	Y	N	Y	N	NCA	NO	
INNISFIL (ALCONA) WPCP	MINISTRY	Y	Y	Y	Y	Y	Y	Y	Y	Y	NCA	NO	
KESWICK WPCP	MUNICIPAL	Y	Y	Y	NR	Y	NR	Y	Y	Y	NCA	NO	
OAKVILLE SOUTH EAST WPCP	MUNICIPAL	Y	Y	Y	NR	NR	Y	Y	NCA	NCA	NCA	NO	
ORILLIA WPCP	MUNICIPAL	Y	Y	Y	NR	NR	Y	Y	N	N	NCA	NO	
PENETANGUISHENE WPCP MAIN ST PLANT	MUNICIPAL	Y	Y	Y	NR	NR	Y	Y	NCA	NCA	NCA	NO	
STOUFFVILLE WPCP	MUNICIPAL	Y	Y	Y	Y	NR	Y	Y	NCA	NCA	NCA	NO	
TOTTENHAM WPCP	MUNICIPAL	Y	Y	Y	NR	NR	Y	Y	NCA	NCA	NCA	NO	

NON-COMPLYING PLANTS
AND PLANTS WITH INSUFFICIENT DATA FOR ASSESSMENT

Plant Name	Operation Authority	Compliance Status										Remedial Program	Anticipated Compliance
		1991						1990	1989	1988	1987		
		concentration			loading								
		BOD	SS	TP	BOD	SS	TP						
CLARKSON WPCP SOUTH-PEEL SYSTEM	MINISTRY	Y	Y	N	Y	Y	Y	Y	Y	Y	NCA	YES	
FOX ST SEWAGE TREATMENT PLANT	MUNICIPAL	Y	Y	N	NR	NR	Y	Y	NCA	NCA	NCA	YES	

APPENDIX A

SUMMARY OF STP PERFORMANCE, 1991 AGAINST CERTIFICATE OF APPROVAL LIMITS

REGION: 4. SOUTHEASTERN

Legend

- • non-compliance for that year
- Y compliance for that year
- ID insufficient data for assessment
- ND no discharge in that year
- NA not applicable
- NR not required for assessment
- NCA not assessed by C of A in that year

COMPLYING PLANTS

Plant Name	Operation Authority	Compliance Status 1991 concentration BOD	SS	TP	loading BOD	SS	TP	1990	1989	1988	1987	Remedial Program	Anticipated Compliance
BELLEVILLE WPCP	MINISTRY	Y	Y	Y	NR	NR	NR	NCA	NCA	NCA	NCA	NO	
CHALK RIVER WPCP	MINISTRY	Y	Y	Y	Y	Y	Y	NCA	NCA	NCA	NCA	YES	9301
CHARLOTTENBURGH WPCP	MINISTRY	Y	Y	NR	Y	Y	NR	Y	NCA	NCA	NCA	NO	
CORNWALL WPCP	MUNICIPAL	Y	Y	Y	NR	NR	NR	Y	Y	NCA	NCA	NO	
DELORO WPCP	MINISTRY	Y	Y	NR	NR	NR	NR	NCA	NCA	NCA	NCA	NO	
MADOC LAGOON	MINISTRY	Y	Y	Y	Y	Y	Y	N	NCA	NCA	NCA	NO	
SPENCERVILLE LAGOON	MINISTRY	ND	ND	ND	ND	ND	ND	NCA	NCA	NCA	NCA	NO	

NON-COMPLYING PLANTS AND PLANTS WITH INSUFFICIENT DATA FOR ASSESSMENT

Plant Name	Operation Authority	Compliance Status 1991 concentration BOD	SS	TP	loading BOD	SS	TP	1990	1989	1988	1987	Remedial Program	Anticipated Compliance
ALMONTE LAGOON	MINISTRY	Y	Y	Y	ID	ID	ID	NCA	NCA	NCA	NCA	YES	9801
BATH WPCP	MUNICIPAL	ID	ID	N	Y	Y	Y	ID	NCA	NCA	NCA	YES	92
ROBERT O PICHORD ENV CENTRE	MUNICIPAL	N	N	N	N	N	N	N	N	NCA	NCA	NO	
WENDOVER WPCP	MINISTRY	N	Y	NR	NR	NR	NR	NCA	NCA	NCA	NCA	NO	
WINCHESTER LAGOON	MINISTRY	Y	Y	Y	ID	ID	ID	Y	NCA	NCA	NCA	YES	9301

APPENDIX A

SUMMARY OF STP PERFORMANCE, 1991
AGAINST CERTIFICATE OF APPROVAL LIMITS

REGION: 5. NORTHEASTERN

Legend

*	non-compliance for that year
Y	compliance for that year
ID	insufficient data for assessment
ND	no discharge in that year
NA	not applicable
NR	not required for assessment
NCA	not assessed by C of A in that year

COMPLYING PLANTS

Plant Name	Operation Authority	Compliance Status										Remedial Program	Anticipated Compliance
		1991						1990	1989	1988	1987		
		concentration			loading								
		BOD	SS	TP	BOD	SS	TP						
AZILDA WPCP	MUNICIPAL	Y	Y	Y	NR	NR	NR	NCA	NCA	NCA	NCA	NO	
BRUCE MINES LAGOON	MINISTRY	Y	Y	NR	Y	Y	NR	NCA	NCA	NCA	NCA	YES	
CALLANDER LAGOON	MINISTRY	Y	Y	Y	Y	Y	Y	Y	NCA	NCA	NCA	YES	
CONISTON WPCP	MUNICIPAL	Y	Y	NR	Y	Y	NR	Y	NCA	NCA	NCA	NO	
ENGLEHART LAGOON	MINISTRY	Y	Y	Y	Y	Y	Y	NCA	NCA	NCA	NCA	YES	
HALLEBOURG LAGOON	MUNICIPAL	Y	Y	Y	Y	Y	Y	ID	NCA	NCA	NCA	NO	
JOGUES LAGOON	MUNICIPAL	Y	Y	Y	Y	Y	Y	N	NCA	NCA	NCA	NO	
KILLARNEY LAGOON	MINISTRY	Y	Y	Y	Y	Y	Y	NCA	NCA	NCA	NCA	NO	
LAKE TEMISKAMING NEW WPCP	MINISTRY	Y	Y	Y	Y	Y	Y	Y	NCA	NCA	NCA	NO	
LAKE TEMISKAMING OLD WPCP	MINISTRY	Y	Y	Y	Y	Y	Y	Y	Y	Y	NCA	NO	
NEW LISKEARD LAGOON	MUNICIPAL	Y	Y	Y	Y	Y	Y	NCA	NCA	NCA	NCA	NO	
VAL GAGNE LAGOON	MINISTRY	ND	ND	ND	ND	ND	ND	Y	NCA	NCA	NCA	NO	
VAL-RITA LAGOON	MUNICIPAL	Y	Y	Y	Y	Y	Y	N	NCA	NCA	NCA	NO	
WAWA LAGOON	MINISTRY	Y	Y	Y	Y	Y	Y	Y	Y	NCA	NCA	NO	

NON-COMPLYING PLANTS
AND PLANTS WITH INSUFFICIENT DATA FOR ASSESSMENT

Plant Name	Operation Authority	Compliance Status										Remedial Program	Anticipated Compliance
		1991						1990	1989	1988	1987		
		concentration			loading								
		BOD	SS	TP	BOD	SS	TP						
POWASSAN LAGOON	MINISTRY	Y	N	Y	Y	Y	Y	NCA	NCA	NCA	NCA	NO	

APPENDIX A

SUMMARY OF STP PERFORMANCE, 1991 AGAINST CERTIFICATE OF APPROVAL LIMITS

Legend	
*	non-compliance for that year
Y	compliance for that year
ID	insufficient data for assessment
ND	no discharge in that year
NA	not applicable
NR	not required for assessment
NCA	not assessed by C of A in that year

REGION: 6. NORTHWESTERN

COMPLYING PLANTS

Plant Name	Operation Authority	Compliance Status 1991 concentration BOD	SS	TP	loading BOD	SS	TP	1990	1989	1988	1987	Remedial Program	Anticipated Compliance
BARWICK (HAMLET OF)	MUNICIPAL	Y	Y	NR	NR	NR	NR	NCA	NCA	NCA	NCA	NO	
MANITOUWADGE LAGOON	MUNICIPAL	Y	Y	NR	NR	NR	NR	Y	NCA	NCA	NCA	NO	
THUNDER BAY WPCP	MUNICIPAL	Y	Y	Y	NR	NR	NR	N	NCA	NCA	NCA	NO	

NON-COMPLYING PLANTS AND PLANTS WITH INSUFFICIENT DATA FOR ASSESSMENT

Plant Name	Operation Authority	Compliance Status 1991 concentration BOD	SS	TP	loading BOD	SS	TP	1990	1989	1988	1987	Remedial Program	Anticipated Compliance
SCHREIBER WPCP	MINISTRY	N	N	NR	N	Y	NR	NCA	NCA	NCA	NCA	YES	

APPENDIX B

LIST OF COMPLYING STPs ASSESSED AGAINST MOEE POLICY EFFLUENT GUIDELINES

1991

(INCLUDING C OF A PLANTS)

APPENDIX B

SUMMARY OF STP PERFORMANCE, 1991 AGAINST MOEE POLICY EFFLUENT GUIDELINES AND CANADA – U.S. AGREEMENT
COMPLYING PLANTS

REGION: 1. SOUTHWESTERN

Legend
* non–compliance for that year
C C of A plants
Y compliance for that year
ID insufficient data for assessment
ND no discharge in that year
NDD no direct discharge by design
NE non existent in that year

	Plant Name	Operation Authority	Compliance Status							Remedial Program	Anticipated Compliance
			1991 BOD	1991 SS	1991 TP	1990	1989	1988	1987		
	ADELAIDE WPCP	MUNICIPAL	Y	Y	Y	Y	Y	Y	Y	NO	
	AILSA CRAIG WPCP	MINISTRY	Y	Y	Y	Y	N	Y	N	NO	
C	ALVINSTON WPCP	MINISTRY	Y	Y	Y	Y	Y	Y	Y	NO	
C	AYLMER LAGOON	MINISTRY	Y	Y	Y	Y	Y	N	N	NO	
	BELLE RIVER–MAIDSTONE WPCP	MINISTRY	Y	Y	Y	Y	Y	Y	N	NO	
	BELMONT LAGOON	MINISTRY	Y	Y	Y	Y	N	Y	N	NO	
	BLYTH WPCP	MINISTRY	Y	Y	Y	Y	Y	Y	Y	NO	
	BRIGHT'S GROVE LAGOON	MINISTRY	Y	Y	NR	Y	Y	Y	Y	NO	
	BRUSSELS WPCP	MINISTRY	Y	Y	Y	Y	Y	Y	Y	NO	
C	CHATHAM WPCP	MUNICIPAL	Y	Y	Y	Y	Y	N	N	NO	
	CHESLEY LAGOON	MUNICIPAL	Y	Y	Y	Y	N	N	N	NO	
	CLINTON WPCP	MUNICIPAL	Y	Y	Y	Y	Y	Y	N	NO	
	COLCHESTER SOUTH LAGOON	MINISTRY	Y	Y	Y	Y	ID	NCA	NCA	NO	
	COMBER LAGOON	MINISTRY	Y	Y	Y	Y	Y	Y	Y	NO	
	CORUNNA P.V. WPCP	MINISTRY	Y	Y	Y	Y	Y	Y	Y	NO	
	COURTRIGHT WPCP	MINISTRY	Y	Y	Y	Y	Y	Y	Y	NO	
C	CRAIGLEIGH WPCP	MUNICIPAL	Y	Y	Y	Y	Y	Y	Y	YES	
	DRESDEN WPCP	MINISTRY	Y	Y	Y	N	N	N	N	NO	
C	DUNDALK LAGOON	MINISTRY	Y	Y	Y	Y	Y	Y	Y	NO	
	DURHAM MUN WPCP	MINISTRY	Y	Y	Y	Y	Y	Y	Y	NO	
	EDGEWATER BEACH LAGOON	MINISTRY	Y	Y	Y	Y	Y	Y	Y	NO	
	ESSEX LAGOON N.E.	MINISTRY	Y	Y	Y	Y	Y	Y	Y	NO	
	ESSEX LAGOON S.W.	MINISTRY	Y	Y	Y	Y	Y	Y	Y	NO	
C	EXETER LAGOON	MUNICIPAL	Y	Y	Y	ID	Y	Y	Y	NO	
	FOREST LAGOON	MINISTRY	Y	Y	NR	N	N	N	N	YES	
	GODERICH WPCP	MUNICIPAL	Y	Y	Y	Y	N	N	N	NO	
C	GREENWAY WPCP	MUNICIPAL	Y	Y	Y	Y	Y	Y	N	YES	92
	HANOVER WPCP	MUNICIPAL	Y	Y	Y	Y	Y	Y	N	NO	

APPENDIX B

SUMMARY OF STP PERFORMANCE, 1991
AGAINST MOEE POLICY EFFLUENT GUIDELINES
AND CANADA – U.S. AGREEMENT
COMPLYING PLANTS

REGION: 1. SOUTHWESTERN

Legend
* non–compliance for that year
C C of A plants
Y compliance for that year
ID insufficient data for assessment
ND no discharge in that year
NDD no direct discharge by design
NE non existent in that year

	Plant Name	Operation Authority	Compliance Status							Remedial Program	Anticipated Compliance
			1991			1990	1989	1988	1987		
			BOD	SS	TP						
	HENSALL LAGOON	MINISTRY	Y	Y	NR	Y	Y	Y	Y	NO	
	HURON PARK WPCP	MINISTRY	Y	Y	NR	Y	Y	Y	Y	NO	
	INGERSOLL OLD WPCP	MINISTRY	Y	Y	Y	Y	N	Y	Y	NO	
C	LITTLE RIVER WPCP	MUNICIPAL	Y	Y	Y	Y	Y	Y	Y	NO	
	LITTLE RIVER WPCP #2	MUNICIPAL	Y	Y	Y	ID	NCA	NCA	NCA	NO	
	LUCAN LAGOON	MINISTRY	Y	Y	NR	Y	Y	Y	Y	YES	
	MARKDALE LAGOON	MINISTRY	NDD	NDD	NDD	NDD	NDD	NDD	ND	NO	
	MCGREGOR LAGOON	MINISTRY	NDD	NDD	NDD	NDD	NDD	NDD	Y	YES	
	MEAFORD WPCP	MINISTRY	Y	Y	NR	Y	Y	Y	Y	NO	
	MILDMAY WPCP	MINISTRY	Y	Y	Y	Y	N	Y	Y	NO	
	MITCHELL'S BAY LAGOON	MINISTRY	ND	ND	ND	N	N	N	ND	NO	
	NEUSTADT LAGOON	MINISTRY	Y	Y	Y	Y	Y	Y	Y	NO	
	NORWICH LAGOON	MINISTRY	Y	Y	Y	Y	Y	Y	Y	NO	
C	OXFORD WPCP	MUNICIPAL	Y	Y	Y	Y	Y	Y	N	NO	
	PAISLEY WPCP	MINISTRY	Y	Y	Y	Y	Y	Y	N	NO	
	PARKHILL LAGOON	MINISTRY	Y	Y	Y	Y	Y	N	Y	NO	
	PETROLIA WPCP	MINISTRY	Y	Y	Y	Y	Y	Y	Y	NO	
C	PORT BURWELL WPCP	MINISTRY	Y	Y	Y	Y	N	N	N	NO	
	PORT ELGIN WPCP	MUNICIPAL	Y	Y	NR	Y	Y	Y	Y	YES	
C	POTTERSBURG WPCP	MUNICIPAL	Y	Y	Y	Y	Y	Y	Y	NO	
	RIDGETOWN LAGOON	MINISTRY	Y	Y	Y	Y	N	N	N	NO	
	SARNIA WPCP	MUNICIPAL	Y	Y	Y	N	N	N	Y	NO	
	SEAFORTH LAGOON	MINISTRY	Y	Y	Y	Y	Y	Y	Y	YES	
	SOUTHAMPTON WPCP	MINISTRY	Y	Y	NR	Y	Y	Y	Y	NO	
	SOUTHLAND PARK WPCP	MINISTRY	Y	Y	Y	Y	Y	Y	Y	NO	
	ST MARYS WPCP	MINISTRY	Y	Y	Y	Y	Y	N	Y	YES	9103
C	ST THOMAS WPCP	MUNICIPAL	Y	Y	Y	Y	N	N	Y	NO	
	STRATFORD WPCP	MINISTRY	Y	Y	Y	Y	Y	Y	N	NO	

APPENDIX B

SUMMARY OF STP PERFORMANCE, 1991 AGAINST MOEE POLICY EFFLUENT GUIDELINES AND CANADA – U.S. AGREEMENT *COMPLYING PLANTS*

REGION: 1. SOUTHWESTERN

Legend
* non–compliance for that year
C C of A plants
Y compliance for that year
ID insufficient data for assessment
ND no discharge in that year
NDD no direct discharge by design
NE non existent in that year

	Plant Name	Operation Authority	Compliance Status							Remedial Program	Anticipated Compliance
			1991			1990	1989	1988	1987		
			BOD	SS	TP						
	TARA LAGOON	MINISTRY	Y	Y	Y	Y	Y	Y	Y	NO	
C	TAVISTOCK LAGOON	MINISTRY	Y	Y	Y	Y	Y	N	N	NO	
	THAMESVILLE WPCP	MINISTRY	Y	Y	Y	Y	Y	Y	N	NO	
	THORNBURY LAGOON	MINISTRY	Y	Y	NR	Y	Y	Y	Y	NO	
	TILLSONBURG WPCP	MINISTRY	Y	Y	Y	Y	Y	Y	Y	NO	
	TOBERMORY LAGOON	MUNICIPAL	NDD	NDD	NDD	NDD	NDD	NDD	N	YES	
	VAN ASTRA WPCP	MINISTRY	Y	Y	Y	Y	Y	Y	N	NO	
	VAUXHALL WPCP	MUNICIPAL	Y	Y	Y	Y	Y	Y	Y	NO	
	WALKERTON WPCP	MUNICIPAL	Y	Y	Y	N	Y	Y	N	NO	
	WALLACEBURG WPCP	MINISTRY	Y	Y	Y	N	N	N	Y	YES	
	WEST LORNE LAGOON	MINISTRY	Y	Y	Y	Y	Y	Y	Y	YES	
	WESTERLY WPCP	MUNICIPAL	Y	Y	Y	Y	N	Y	Y	NO	
	WESTMINSTER WPCP	MINISTRY	Y	Y	Y	Y	Y	Y	Y	NO	
C	WHEATLY WPCP	MINISTRY	Y	Y	Y	Y	Y	Y	Y	NO	
	WIARTON LAGOON	MINISTRY	Y	Y	Y	Y	Y	Y	Y	NO	
	WINGHAM LAGOON	MINISTRY	Y	Y	NR	Y	Y	Y	Y	YES	
	WOODSTOCK WPCP	MUNICIPAL	Y	Y	Y	Y	Y	N	Y	NO	
	WYOMING WPCP	MINISTRY	Y	Y	Y	Y	Y	Y	N	NO	
	ZURICH LAGOON	MINISTRY	Y	Y	NR	Y	Y	Y	Y	NO	

APPENDIX B

SUMMARY OF STP PERFORMANCE, 1991
AGAINST MOEE POLICY EFFLUENT GUIDELINES
AND CANADA – U.S. AGREEMENT
COMPLYING PLANTS

REGION: 2. WEST CENTAL

Legend
- * non–compliance for that year
- C C of A plants
- Y compliance for that year
- ID insufficient data for assessment
- ND no discharge in that year
- NDD no direct discharge by design
- NE non existent in that year

	Plant Name	Operation Authority	Compliance Status							Remedial Program	Anticipated Compliance
			1991 BOD	1991 SS	1991 TP	1990	1989	1988	1987		
	AIRPORT WPCP (DISCHARGE TO A TILE FIELD)	MUNICIPAL	NDD	NDD	NDD	ND	ND	ND	ND	NO	
C	ANGER AVE.WPCP	MUNICIPAL	Y	Y	Y	Y	N	N	N	NO	
	ARTHUR WPCP	MINISTRY	Y	Y	Y	Y	Y	N	Y	YES	9105
	AYR PV WPCP	MINISTRY	Y	Y	Y	Y	Y	Y	Y	NO	
	BADEN WPCP	MINISTRY	Y	Y	Y	Y	Y	N	N	NO	
C	BIGGAR LAGOON	MUNICIPAL	Y	Y	NR	Y	Y	Y	Y	NO	
	BRANTFORD WPCP	MINISTRY	Y	Y	Y	Y	N	N	N	NO	
	CAINSVILLE LAGOON (SERVES INDUSTRY)	MUNICIPAL	Y	Y	Y	Y	Y	ND	Y	NO	
C	CALEDONIA WPCP	MINISTRY	Y	Y	Y	N	Y	Y	N	NO	
	CAYUGA WPCP	MINISTRY	Y	Y	Y	Y	Y	Y	Y	NO	
	DELHI WPCP	MINISTRY	Y	Y	Y	Y	Y	Y	Y	NO	
	DRAYTON LAGOON	MUNICIPAL	Y	Y	Y	Y	Y	Y	Y	NO	
	DUNDAS KING ST.WPCP	MUNICIPAL	Y	Y	Y	Y	Y	Y	N	YES	9204
	DUNNVILLE WPCP	MINISTRY	Y	Y	Y	Y	N	Y	Y	NO	
C	ELMIRA WPCP (COMBINED FLOW)	MINISTRY	Y	Y	Y	Y	N	N	N	NO	
	ELORA WPCP	MUNICIPAL	Y	Y	Y	Y	N	Y	Y	NO	
	FERGUS WPCP	MINISTRY	Y	Y	Y	Y	N	N	N	NO	
	GALT WPCP	MINISTRY	Y	Y	Y	N	Y	Y	Y	NO	
	GRAND VALLEY WPCP	MINISTRY	Y	Y	Y	Y	Y	N	Y	NO	
C	GUELPH WPCP	MUNICIPAL	Y	Y	Y	Y	Y	Y	Y	NO	
	HAGERSVILLE WPCP	MINISTRY	Y	Y	Y	Y	Y	Y	N	NO	
	HARRISTON LAGOON	MINISTRY	Y	Y	NR	Y	Y	Y	N	NO	
	KITCHENER WPCP	MINISTRY	Y	Y	Y	Y	Y	N	N	NO	
	NEW HAMBURG LAGOON	MINISTRY	Y	Y	NR	Y	Y	Y	Y	NO	
	NIAGARA–ON–THE–LAKE LAGOON	MUNICIPAL	Y	Y	NR	Y	Y	Y	Y	NO	
	ORANGEVILLE WPCP	MINISTRY	Y	Y	Y	Y	Y	Y	Y	NO	
	OSWEGO PARK LAGOON	MINISTRY	Y	Y	NR	Y	Y	N	Y	NO	
C	PALMERSTON WPCP	MINISTRY	Y	Y	NR	Y	Y	N	N	NO	

APPENDIX B

SUMMARY OF STP PERFORMANCE, 1991 AGAINST MOEE POLICY EFFLUENT GUIDELINES AND CANADA – U.S. AGREEMENT

COMPLYING PLANTS

REGION: 2. WEST CENTAL

Legend

*	non–compliance for that year
C	C of A plants
Y	compliance for that year
ID	insufficient data for assessment
ND	no discharge in that year
NDD	no direct discharge by design
NE	non existent in that year

	Plant Name	Operation Authority	Compliance Status							Remedial Program	Anticipated Compliance
			1991			1990	1989	1988	1987		
			BOD	SS	TP						
	PARIS WPCP	MINISTRY	Y	Y	Y	Y	Y	Y	Y	NO	
C	PORT DALHOUSIE WPCP	MUNICIPAL	Y	Y	Y	Y	N	Y	Y	NO	
	PORT ROBINSON LAGOON	MUNICIPAL	Y	Y	NR	NCA	NCA	NCA	NCA	NO	
	PORT ROWAN LAGOON	MINISTRY	Y	Y	Y	N	Y	Y	N	NO	
C	PORT WELLER WPCP	MUNICIPAL	Y	Y	Y	Y	N	Y	Y	NO	
	SEAWAY WPCP	MUNICIPAL	Y	Y	Y	Y	N	N	Y	NO	
	SHELBURNE WPCP	MINISTRY	Y	Y	Y	Y	N	N	Y	YES	92
	SIMCOE WPCP	MINISTRY	Y	Y	Y	Y	Y	N	Y	NO	
	ST GEORGE PV WPCP	MINISTRY	Y	Y	Y	Y	Y	Y	Y	NO	
C	STAMFORD WPCP	MUNICIPAL	Y	Y	Y	N	Y	Y	N	NO	
	STELCO IND. PARK LAGOON	MINISTRY	Y	Y	Y	Y	Y	Y	Y	NO	
	STEVENSVILLE–DOUGLASTOWN LAGOON	MUNICIPAL	Y	Y	NR	Y	Y	Y	Y	NO	
	WATERDOWN WPCP	MUNICIPAL	Y	Y	Y	Y	NCA	Y	N	YES	9204
	WATERFORD LAGOON	MINISTRY	Y	Y	Y	Y	Y	Y	Y	NO	
C	WATERLOO WPCP	MINISTRY	Y	Y	Y	Y	N	N	N	NO	
C	WELLAND WPCP	MUNICIPAL	Y	Y	Y	Y	N	Y	N	NO	
	WELLESLEY WPCP	MINISTRY	Y	Y	Y	N	Y	Y	N	NO	

APPENDIX B

SUMMARY OF STP PERFORMANCE, 1991
AGAINST MOEE POLICY EFFLUENT GUIDELINES
AND CANADA – U.S. AGREEMENT
COMPLYING PLANTS

REGION: 3. CENTAL

Legend
- * non–compliance for that year
- C C of A plants
- Y compliance for that year
- ID insufficient data for assessment
- ND no discharge in that year
- NDD no direct discharge by design
- NE non existent in that year

	Plant Name	Operation Authority	Compliance Status							Remedial Program	Anticipated Compliance
			1991			1990	1989	1988	1987		
			BOD	SS	TP						
	ACTON WPCP + LAGOON	MUNICIPAL	Y	Y	Y	Y	Y	Y	N	NO	
	ALLISTON WPCP	MINISTRY	Y	Y	Y	Y	Y	Y	Y	NO	
	ANGUS WPCP	MINISTRY	Y	Y	Y	Y	Y	Y	Y	NO	
C	BARRIE WPCP	MUNICIPAL	Y	Y	Y	Y	Y	Y	Y	NO	
	BEAVERTON RIVER 1 LAGOON (SUNDERLAND)	MUNICIPAL	NDD	NDD	NDD	NDD	NDD	NDD	ND	NO	
	BEAVERTON RIVER 2 LAGOON (CANNINGTON)	MUNICIPAL	Y	Y	Y	Y	Y	Y	Y	NO	
	BEETON LAGOON	MINISTRY	NDD	NDD	NDD	NDD	NDD	NDD	ND	NO	
	BOBCAGEON WPCP(SUMM.POP.SERVED(2480)	MINISTRY	Y	Y	Y	Y	Y	Y	N	NO	
	BRACEBRIDGE LAGOON	MUNICIPAL	Y	Y	Y	Y	Y	Y	Y	NO	
	BRACEBRIDGE WPCP	MUNICIPAL	Y	Y	Y	Y	Y	Y	Y	NO	
	BRADFORD WPCP	MINISTRY	Y	Y	Y	Y	Y	Y	Y	NO	
	CAMPBELLFORD WPCP	MINISTRY	Y	Y	Y	Y	Y	Y	N	NO	
	CARDIFF LAGOON	MUNICIPAL	Y	Y	NR	Y	Y	ID	Y	NO	
	COBOURG WPCP NO 2	MUNICIPAL	Y	Y	Y	Y	Y	Y	N	NO	
	COLBORNE WPCP	MUNICIPAL	Y	Y	Y	Y	ID	Y	Y	NO	
	COLDWATER WPCP	MINISTRY	Y	Y	NR	Y	Y	Y	Y	NO	
	COLLINGWOOD WPCP	MUNICIPAL	Y	Y	Y	Y	Y	N	N	NO	
	COOKSTOWN WPCP	MINISTRY	Y	Y	Y	Y	Y	ID	ID	NO	
	ELMVALE LAGOON	MUNICIPAL	Y	Y	NR	N	Y	ID	Y	YES	
	FENELON FALLS WPCP(SUMMER POPSERVE 3136)	MINISTRY	Y	Y	Y	Y	Y	Y	N	NO	
	GEORGETOWN WPCP	MUNICIPAL	Y	Y	Y	N	N	Y	Y	NO	
	GRAHAM CREEK WPCP (NEWCASTLE)	MUNICIPAL	Y	Y	NR	Y	Y	Y	Y	NO	
	GRAVENHURST WPCP (DUAL OPERATION)	MUNICIPAL	Y	Y	Y	Y	Y	Y	Y	NO	
	HARMONY CR WPCP NO 1	MUNICIPAL	ND	ND	ND	ID	ND	ID	ID	NO	
	HARMONY CR WPCP NO 2	MUNICIPAL	ND	ND	ND	ID	ND	ID	ID	NO	
	HARMONY CREEK 1&2 COMBINED EFFLUENT	MUNICIPAL	Y	Y	Y	N	N	Y	Y	NO	
	HASTINGS WPCP	MINISTRY	Y	Y	Y	Y	Y	N	N	NO	
	HAVELOCK LAGOON	MINISTRY	Y	Y	Y	Y	Y	Y	Y	NO	

APPENDIX B

SUMMARY OF STP PERFORMANCE, 1991 AGAINST MOEE POLICY EFFLUENT GUIDELINES AND CANADA – U.S. AGREEMENT

COMPLYING PLANTS

REGION: 3. CENTAL

Legend
* non–compliance for that year
C C of A plants
Y compliance for that year
ID insufficient data for assessment
ND no discharge in that year
NDD no direct discharge by design
NE non existent in that year

	Plant Name	Operation Authority	Compliance Status							Remedial Program	Anticipated Compliance
			1991			1990	1989	1988	1987		
			BOD	SS	TP						
	HIGHLAND CREEK WPCP (SCARBOROUGH)	MUNICIPAL	Y	Y	Y	Y	Y	Y	Y	NO	
	HOLLAND LANDING LAGOON	MUNICIPAL	Y	Y	Y	Y	Y	Y	Y	NO	
	HUNTSVILLE WPCP	MUNICIPAL	Y	Y	Y	Y	Y	Y	Y	NO	
C	INNISFIL (ALCONA) WPCP	MINISTRY	Y	Y	Y	Y	Y	Y	ID	NO	
C	KESWICK WPCP	MUNICIPAL	Y	Y	Y	Y	Y	Y	Y	NO	
	KLEINBURG WPCP	MUNICIPAL	Y	Y	NR	Y	Y	Y	Y	NO	
	LAKE SIMCOE LAGOON (BEAVERTON)	MUNICIPAL	Y	Y	Y	Y	Y	Y	Y	NO	
	LAKEFIELD LAGOON	MUNICIPAL	Y	Y	Y	Y	N	N	Y	NO	
	LAKEVIEW WPCP SOUTH–PEEL SYSTEM	MINISTRY	Y	Y	Y	Y	ID	Y	N	NO	
	LINDSAY LAGOON	MUNICIPAL	Y	Y	Y	Y	N	N	N	NO	
	MIDLAND WPCP	MUNICIPAL	Y	Y	Y	N	N	Y	N	NO	
	MILLBROOK WPCP	MINISTRY	Y	Y	Y	Y	Y	Y	Y	NO	
	MILTON WPCP	MUNICIPAL	Y	Y	Y	Y	Y	Y	Y	NO	
	MINDEN WPCP	MUNICIPAL	Y	Y	Y	Y	Y	Y	Y	NO	
	MOUNT ALBERT WPCP	MUNICIPAL	Y	Y	Y	Y	N	Y	ID	NO	
	NONQUON RIVER LAGOON (PORT PERRY)	MUNICIPAL	Y	Y	Y	Y	Y	Y	Y	NO	
	NORTH TORONTO WPCP (EAST YORK)	MUNICIPAL	Y	Y	Y	Y	N	N	Y	NO	
	NORWOOD WPCP	MINISTRY	Y	Y	Y	N	Y	Y	Y	NO	
C	OAKVILLE SOUTH EAST WPCP	MUNICIPAL	Y	Y	Y	Y	Y	Y	Y	NO	
	OMEMEE LAGOON	MINISTRY	Y	Y	Y	NDD	NDD	NDD	ND	NO	
C	ORILLIA WPCP	MUNICIPAL	Y	Y	Y	Y	Y	N	Y	NO	
C	PENETANGUISHENE WPCP MAIN ST PLANT I1	MUNICIPAL	Y	Y	Y	Y	N	N	Y	NO	
	PETERBOROUGH WPCP	MUNICIPAL	Y	Y	Y	Y	Y	Y	N	NO	
	PORT CARLING WPCP	MUNICIPAL	Y	Y	Y	Y	Y	ID	Y	NO	
	PORT DARLINGTON WPCP	MUNICIPAL	Y	Y	Y	Y	Y	Y	N	NO	
	PORT MCNICOLL WPCP	MINISTRY	Y	Y	Y	Y	Y	Y	Y	YES	
	PRINGLE CREEK WPCP NO 1	MUNICIPAL	Y	Y	Y	Y	Y	Y	Y	NO	
	PRINGLE CREEK WPCP NO 2	MUNICIPAL	Y	Y	Y	Y	Y	Y	Y	NO	

APPENDIX B

SUMMARY OF STP PERFORMANCE, 1991 AGAINST MOEE POLICY EFFLUENT GUIDELINES AND CANADA – U.S. AGREEMENT
COMPLYING PLANTS

REGION: 3. CENTAL

Legend
* non–compliance for that year
C C of A plants
Y compliance for that year
ID insufficient data for assessment
ND no discharge in that year
NDD no direct discharge by design
NE non existent in that year

	Plant Name	Operation Authority	Compliance Status 1991 BOD	SS	TP	1990	1989	1988	1987	Remedial Program	Anticipated Compliance
	SCHOMBERG LAGOON	MUNICIPAL	Y	Y	Y	ND	NCA	NCA	NCA	NO	
	SKYWAY WPCP	MUNICIPAL	Y	Y	Y	Y	Y	Y	Y	NO	
C	STOUFFVILLE WPCP	MUNICIPAL	Y	Y	Y	Y	Y	Y	Y	NO	
	SUTTON WPCP	MUNICIPAL	Y	Y	Y	Y	Y	Y	N	NO	
C	TOTTENHAM WPCP	MUNICIPAL	Y	Y	NR	Y	Y	ID	NCA	NO	
	UXBRIDGE BROOK WPCP	MUNICIPAL	Y	Y	Y	Y	Y	Y	Y	NO	
	VICTORIA HARBOUR WPCP	MINISTRY	Y	Y	Y	Y	Y	Y	Y	NO	
	WARKWORTH LAGOON	MUNICIPAL	Y	Y	Y	ND	N	N	N	NO	
	WASAGA BEACH WPCP (SUM.POP.SERV.73000)	MINISTRY	NDD	NDD	NDD	NDD	NDD	NDD	ND	NO	
	WOODLAND ACRES WPCP	MINISTRY	Y	Y	Y	N	Y	Y	Y	NO	

APPENDIX B

SUMMARY OF STP PERFORMANCE, 1991 AGAINST MOEE POLICY EFFLUENT GUIDELINES AND CANADA – U.S. AGREEMENT

COMPLYING PLANTS

REGION: 4. SOUTHEASTERN

Legend

* non–compliance for that year
C C of A plants
Y compliance for that year
ID insufficient data for assessment
ND no discharge in that year
NDD no direct discharge by design
NE non existent in that year

	Plant Name	Operation Authority	Compliance Status							Remedial Program	Anticipated Compliance
			1991			1990	1989	1988	1987		
			BOD	SS	TP						
	ALFRED LAGOON	MINISTRY	Y	Y	NR	N	N	Y	Y	NO	
	BANCROFT WPCP	MUNICIPAL	Y	Y	NR	Y	Y	ID	Y	NO	
	BARRY'S BAY WPCP	MINISTRY	Y	Y	Y	Y	Y	Y	Y	NO	
	BATAWA WPCP	MINISTRY	Y	Y	Y	Y	N	Y	N	NO	
C	BELLEVILLE WPCP	MINISTRY	Y	Y	Y	Y	Y	Y	N	NO	
	CANA WPCP	MINISTRY	Y	Y	NR	Y	Y	N	Y	NO	
	CASSELMAN LAGOON	MINISTRY	Y	Y	Y	Y	Y	Y	Y	NO	
C	CHARLOTTENBURGH WPCP	MINISTRY	Y	Y	NR	Y	ID	NCA	NCA	NO	
	CHUTE A BLONDEAU WPCP	MINISTRY	Y	Y	NR	Y	Y	Y	N	NO	
	COBDEN WPCP	MUNICIPAL	Y	Y	Y	Y	Y	Y	Y	NO	
C	CORNWALL WPCP	MUNICIPAL	Y	Y	Y	N	Y	N	N	NO	
C	DELORO WPCP	MINISTRY	Y	Y	NR	Y	Y	ID	N	NO	
	EGANVILLE WPCP	MINISTRY	Y	Y	Y	N	Y	Y	Y	NO	
	FRANKFORD WPCP	MINISTRY	Y	Y	Y	N	Y	Y	Y	NO	
	GANANOQUE LAGOON	MUNICIPAL	Y	Y	NR	Y	Y	Y	Y	YES	95
	KILLALOE STN.WPCP	MINISTRY	Y	Y	Y	Y	Y	Y	Y	NO	
	KINGSTON TWP WPCP	MINISTRY	Y	Y	Y	Y	Y	Y	Y	NO	
	LANCASTER LAGOON	MINISTRY	Y	Y	NR	Y	Y	Y	Y	YES	9201
	LANSDOWNE LAGOON	MINISTRY	NDD	NDD	NDD	Y	NDD	NDD	Y	NO	
	LONG SAULT WPCP	MUNICIPAL	Y	Y	NR	Y	Y	Y	Y	NO	
C	MADOC LAGOON	MINISTRY	Y	Y	Y	Y	Y	N	Y	NO	
	MARMORA WPCP	MINISTRY	Y	Y	Y	Y	Y	Y	Y	NO	
	MAXVILLE WASTE STAB POND	MINISTRY	Y	Y	Y	ND	ND	NCA	NCA	NO	
	MERRICKVILLE WPCP	MINISTRY	Y	Y	Y	N	N	N	N	YES	9401
	NAPANEE WPCP	MUNICIPAL	Y	Y	Y	Y	N	N	N	NO	
	ODESSA WPCP	MINISTRY	Y	Y	Y	N	N	N	Y	YES	9201
	PERTH LAGOON	MUNICIPAL	Y	Y	Y	Y	Y	Y	N	NO	
	PETAWAWA WPCP	MINISTRY	Y	Y	Y	Y	N	Y	N	NO	

APPENDIX B

SUMMARY OF STP PERFORMANCE, 1991 AGAINST MOEE POLICY EFFLUENT GUIDELINES AND CANADA – U.S. AGREEMENT

COMPLYING PLANTS

REGION: 4. SOUTHEASTERN

Legend	
*	non–compliance for that year
C	C of A plants
Y	compliance for that year
ID	insufficient data for assessment
ND	no discharge in that year
NDD	no direct discharge by design
NE	non existent in that year

	Plant Name	Operation Authority	Compliance Status 1991 BOD	SS	TP	1990	1989	1988	1987	Remedial Program	Anticipated Compliance
	PRESCOTT WPCP	MINISTRY	Y	Y	Y	Y	Y	Y	Y	NO	
	ROCKLAND LAGOON	MINISTRY	Y	Y	NR	Y	Y	Y	Y	YES	9301
C	SPENCERVILLE LAGOON	MINISTRY	ND	ND	ND	NCA	NCA	NCA	NCA	NO	
	ST.ISIDORE LAGOON	MINISTRY	Y	Y	Y	Y	N	Y	N	NO	
	STIRLING LAGOON	MUNICIPAL	Y	Y	Y	N	N	N	ID	NO	
	TRENTON WPCP	MINISTRY	Y	Y	Y	Y	Y	N	Y	NO	
	TWEED LAGOON	MUNICIPAL	Y	Y	Y	Y	N	N	Y	YES	
	VANKLEEK HILL LAGOON	MINISTRY	Y	Y	NR	Y	Y	Y	Y	YES	9301
	WATTS CREEK WPCP	MUNICIPAL	Y	Y	Y	N	N	Y	Y	NO	
	WELLINGTON WPCP	MUNICIPAL	Y	Y	Y	N	N	N	Y	NO	
C	WENDOVER WPCP	MINISTRY	Y	Y	NR	ID	NCA	NCA	NCA	NO	
	WESTPORT LAGOON	MINISTRY	Y	Y	Y	Y	N	N	N	YES	9201
	WILLIAMSBURG LAGOON	MUNICIPAL	Y	Y	NR	Y	ND	ID	ID	NO	
C	WINCHESTER LAGOON	MINISTRY	Y	Y	Y	Y	Y	Y	Y	YES	9301

APPENDIX B

SUMMARY OF STP PERFORMANCE, 1991
AGAINST MOEE POLICY EFFLUENT GUIDELINES
AND CANADA – U.S. AGREEMENT
COMPLYING PLANTS

REGION: 5. NORTHEASTERN

Legend

*	non–compliance for that year
C	C of A plants
Y	compliance for that year
ID	insufficient data for assessment
ND	no discharge in that year
NDD	no direct discharge by design
NE	non existent in that year

	Plant Name	Operation Authority	Compliance Status							Remedial Program	Anticipated Compliance
			1991 BOD	1991 SS	1991 TP	1990	1989	1988	1987		
C	AZILDA WPCP	MUNICIPAL	Y	Y	Y	N	Y	Y	Y	NO	
	BLACK RIVER RAMORE (OP MAY 90)	MINISTRY	Y	Y	Y	ND	NCA	NCA	NCA	NO	
	BLIND RIVER WPCP	MINISTRY	Y	Y	NR	Y	Y	Y	Y	NO	
	BOB'S LAKE LAGOON	MUNICIPAL	Y	Y	NR	Y	N	N	N	NO	
C	BRUCE MINES LAGOON	MINISTRY	Y	Y	NR	Y	Y	Y	Y	YES	
	BURKS FALLS LAGOON	MINISTRY	Y	Y	NR	Y	Y	Y	Y	NO	
C	CALLANDER LAGOON	MINISTRY	Y	Y	Y	Y	N	Y	N	YES	
	CAPREOL LAGOON	MUNICIPAL	NDD	NDD	NDD	NDD	NDD	NDD	Y	NO	
	CECILE TRAILER PARK LAGOON	MINISTRY	Y	Y	NR	Y	ID	ID	ID	NO	
	CHAPLEAU LAGOON	MINISTRY	Y	Y	NR	Y	Y	Y	Y	YES	
	CHELMSFORD LAGOON	MUNICIPAL	Y	Y	NR	Y	Y	Y	Y	YES	9312
	CHELMSFORD WPCP	MUNICIPAL	Y	Y	Y	Y	N	Y	Y	YES	9512
C	CONISTON WPCP	MUNICIPAL	Y	Y	NR	Y	Y	Y	Y	NO	
	DESBARATS	MUNICIPAL	ND	ND	ND	Y	NCA	NCA	NCA	YES	9210
	DOWLING WPCP	MUNICIPAL	Y	Y	NR	Y	Y	Y	Y	NO	
	DUBREUILVILLE LAGOON	MUNICIPAL	NDD	NDD	NDD	NDD	NDD	NDD	ND	NO	
	ESTEN LAKE WPCP	MUNICIPAL	Y	Y	Y	Y	N	Y	Y	NO	
	FALCONBRIDGE TOWNSITE WPCP	MUNICIPAL	Y	Y	NR	N	N	N	N	YES	9110
	FAUQUIER LAGOON	MINISTRY	Y	Y	NR	Y	Y	Y	ID	NO	
	GARSON LAGOON (STANDBY)	MUNICIPAL	Y	Y	NR	Y	Y	Y	Y	NO	
	GLACKMEYER LAGOON	MUNICIPAL	ND	ND	ND	Y	NCA	NCA	NCA	YES	92
	GORE BAY LAGOON	MINISTRY	Y	Y	NR	Y	Y	Y	N	NO	
C	HALLEBOURG LAGOON	MUNICIPAL	Y	Y	Y	Y	Y	Y	ID	NO	
	HARTY LAGOON	MUNICIPAL	Y	Y	Y	N	N	ND	ND	NO	
	HEARST LAGOON	MINISTRY	Y	Y	NR	Y	Y	Y	Y	NO	
	HORNEPAYNE WPCP	MINISTRY	Y	Y	NR	Y	Y	Y	Y	NO	
C	JOGUES LAGOON	MUNICIPAL	Y	Y	Y	N	ND	ND	ID	NO	
	KAPUSKASING WEST END WPCP	MINISTRY	Y	Y	NR	N	ND	ID	NCA	NO	

APPENDIX B

SUMMARY OF STP PERFORMANCE, 1991 AGAINST MOEE POLICY EFFLUENT GUIDELINES AND CANADA – U.S. AGREEMENT

COMPLYING PLANTS

REGION: 5. NORTHEASTERN

Legend
* non–compliance for that year
C C of A plants
Y compliance for that year
ID insufficient data for assessment
ND no discharge in that year
NDD no direct discharge by design
NE non existent in that year

	Plant Name	Operation Authority	Compliance Status							Remedial Program	Anticipated Compliance
			1991			1990	1989	1988	1987		
			BOD	SS	TP						
	KAPUSKASING WPCP	MINISTRY	Y	Y	NR	Y	Y	Y	Y	NO	
C	KILLARNEY LAGOON	MINISTRY	Y	Y	Y	Y	ND	ND	NCA	NO	
	KIRKLAND LAKE WPCP	MINISTRY	Y	Y	Y	Y	N	N	N	NO	
C	LAKE TEMISKAMING NEW WPCP	MINISTRY	Y	Y	Y	Y	N	Y	N	NO	
C	LAKE TEMISKAMING OLD WPCP	MINISTRY	Y	Y	Y	Y	N	N	Y	NO	
	LARDER LAKE TOWNSITE WPCP	MUNICIPAL	NDD	NDD	NDD	NDD	NDD	NDD	ID	NO	
	LATCHFORD WPCP	MINISTRY	Y	Y	NR	Y	Y	Y	N	NO	
	LEVACK WPCP	MUNICIPAL	Y	Y	NR	Y	Y	Y	Y	NO	
	LITTLE CURRENT LAGOON	MINISTRY	Y	Y	NR	Y	Y	Y	Y	NO	
	LIVELY WPCP	MUNICIPAL	Y	Y	NR	Y	Y	Y	Y	YES	9206
	MANITOWANING LAGOON	MINISTRY	Y	Y	NR	Y	Y	Y	Y	YES	
	MATHESON WPCP	MINISTRY	Y	Y	NR	Y	Y	Y	Y	NO	
	MATTAGAMI WPCP	MUNICIPAL	Y	Y	NR	Y	Y	Y	Y	NO	
	MATTAWA LAGOON	MINISTRY	NDD	NDD	NDD	NDD	NDD	NDD	ND	YES	
	MATTICE LAGOON	MINISTRY	Y	Y	NR	Y	Y	Y	ID	NO	
	MOOSONEE WPCP (NORTH)	MINISTRY	Y	Y	NR	Y	Y	ID	Y	NO	
	NOELVILLE LAGOON	MINISTRY	Y	Y	NR	Y	Y	Y	ND	NO	
	NORTH BAY WPCP	MINISTRY	Y	Y	Y	Y	Y	N	N	NO	
	NORTH COBALT LAGOON	MINISTRY	Y	Y	NR	Y	Y	N	Y	YES	
	NORTH GOWARD LAGOON	MUNICIPAL	Y	Y	NR	Y	Y	Y	Y	NO	
	ONAPING WPCP	MUNICIPAL	Y	Y	NR	Y	Y	Y	Y	NO	
	OPASATIKA LAGOON	MINISTRY	ND	ND	ND	N	ND	ND	ID	NO	
	PARRY SOUND WPCP	MINISTRY	Y	Y	Y	Y	Y	Y	Y	NO	
	PORQUIS JUNCTION LAGOON	MUNICIPAL	Y	Y	NR	N	Y	Y	N	NO	
C	POWASSAN LAGOON	MINISTRY	Y	Y	Y	N	Y	N	Y	NO	
	RAMORE LAGOON	MINISTRY	Y	Y	Y	NCA	ID	Y	Y	NO	
	SAULT STE.MARIE WPCP	MINISTRY	Y	Y	NR	Y	Y	Y	Y	YES	
	SMOOTH ROCK FALLS WPCP	MINISTRY	Y	Y	NR	Y	ID	Y	Y	NO	

APPENDIX B

SUMMARY OF STP PERFORMANCE, 1991
AGAINST MOEE POLICY EFFLUENT GUIDELINES
AND CANADA – U.S. AGREEMENT
COMPLYING PLANTS

REGION: 5. NORTHEASTERN

Legend

*	non–compliance for that year
C	C of A plants
Y	compliance for that year
ID	insufficient data for assessment
ND	no discharge in that year
NDD	no direct discharge by design
NE	non existent in that year

	Plant Name	Operation Authority	Compliance Status							Remedial Program	Anticipated Compliance
			1 9 9 1			1990	1989	1988	1987		
			BOD	SS	TP						
	ST.CHARLES LAGOON	MINISTRY	Y	Y	Y	N	N	N	ND	NO	
	STURGEON FALLS WPCP	MINISTRY	Y	Y	Y	Y	N	N	N	NO	
	SUDBURY WPCP	MUNICIPAL	Y	Y	Y	Y	Y	Y	Y	NO	
	SUNDRIDGE LAGOON	MINISTRY	Y	Y	Y	Y	Y	N	Y	NO	
	SWASTIKA WPCP	MUNICIPAL	Y	Y	NR	Y	Y	Y	Y	NO	
	TEMAGAMI LAGOON	MINISTRY	NDD	NDD	NDD	NDD	ND	ND	ND	YES	
	THESSALON LAGOON	MINISTRY	Y	Y	NR	Y	Y	Y	Y	NO	
C	VAL GAGNE LAGOON	MINISTRY	ND	ND	ND	Y	Y	Y	Y	NO	
C	VAL–RITA LAGOON	MUNICIPAL	Y	Y	Y	N	Y	N	N	NO	
	VALLEY EAST WPCP	MUNICIPAL	Y	Y	Y	Y	Y	Y	Y	NO	
	WAHNAPITAE LAGOON	MUNICIPAL	Y	Y	NR	Y	ND	Y	Y	NO	
	WALDEN WPCP	MUNICIPAL	Y	Y	Y	Y	Y	Y	Y	NO	
	WARREN LAGOON	MINISTRY	ND	ND	ND	Y	ND	ND	ND	NO	
C	WAWA LAGOON	MINISTRY	Y	Y	Y	N	N	Y	ND	NO	
	WEBBWOOD LAGOON	MINISTRY	ND	ND	ND	N	Y	N	ND	NO	
	WEST END WPCP	MINISTRY	Y	Y	Y	Y	N	Y	N	NO	
	WHITE RIVER LAGOON	MINISTRY	NDD	NDD	NDD	NDD	ND	ND	ND	YES	
	WHITNEY & TISDALE WPCP	MUNICIPAL	Y	Y	NR	Y	Y	Y	Y	NO	

APPENDIX B

SUMMARY OF STP PERFORMANCE, 1991
AGAINST MOEE POLICY EFFLUENT GUIDELINES
AND CANADA – U.S. AGREEMENT
COMPLYING PLANTS

REGION: 6. NORTHWESTERN

Legend

*	non–compliance for that year
C	C of A plants
Y	compliance for that year
ID	insufficient data for assessment
ND	no discharge in that year
NDD	no direct discharge by design
NE	non existent in that year

	Plant Name	Operation Authority	Compliance Status							Remedial Program	Anticipated Compliance
			1991			1990	1989	1988	1987		
			BOD	SS	TP						
	ATIKOKAN WPCP	MINISTRY	Y	Y	Y	Y	N	N	N	NO	
	BALMERTOWN WPCP	MINISTRY	Y	Y	NR	Y	Y	Y	Y	NO	
C	BARWICK (HAMLET OF)	MUNICIPAL	Y	Y	NR	Y	NCA	NCA	NCA	NO	
	BEARDMORE LAGOON	MINISTRY	NDD	NDD	NDD	NDD	NDD	NDD	ND	NO	
	CARAMAT	MUNICIPAL	NDD	NDD	NDD	NDD	NDD	NDD	ND	YES	9206
	COCHENOUR LAGOON	MINISTRY	Y	Y	NR	Y	Y	Y	Y	NO	
	DRYDEN WPCP	MUNICIPAL	Y	Y	NR	Y	Y	Y	Y	NO	
	EAR FALLS WPCP	MINISTRY	Y	Y	NR	Y	Y	Y	Y	NO	
	EMO LAGOON	MINISTRY	Y	Y	NR	Y	Y	Y	Y	YES	9202
	GERALDTON WPCP	MINISTRY	Y	Y	NR	Y	Y	Y	Y	NO	
	IGNACE WPCP	MINISTRY	Y	Y	Y	Y	Y	Y	Y	NO	
	KENORA WPCP	MUNICIPAL	Y	Y	NR	Y	Y	Y	Y	NO	
	LONGLAC WPCP	MINISTRY	Y	Y	NR	Y	Y	Y	Y	NO	
	MADSEN WPCP	MINISTRY	Y	Y	NR	N	ND	ND	Y	YES	
C	MANITOUWADGE LAGOON	MUNICIPAL	Y	Y	NR	Y	Y	Y	N	NO	
	MARATHON WPCP	MINISTRY	Y	Y	NR	Y	Y	Y	Y	NO	
	NAKINA WPCP (NO PH REMOVAL AUG.18 1987)	MINISTRY	Y	Y	NR	Y	Y	Y	Y	NO	
	NIPIGON WPCP	MUNICIPAL	Y	Y	NR	Y	Y	Y	Y	NO	
	PICKLE LAKE WPCP	MINISTRY	Y	Y	NR	Y	Y	Y	Y	NO	
	RAINY RIVER LAGOON	MINISTRY	Y	Y	NR	Y	Y	Y	Y	NO	
	RED LAKE WPCP	MINISTRY	Y	Y	NR	Y	Y	Y	Y	NO	
	RED ROCK WPCP	MUNICIPAL	Y	Y	NR	Y	Y	Y	Y	NO	
	TERRACE BAY LAGOON	MUNICIPAL	NDD	NDD	NDD	NDD	NDD	NDD	ND	NO	
	TERRACE BAY WPCP	MUNICIPAL	Y	Y	NR	NDD	NDD	NDD	Y	NO	

APPENDIX C

LIST OF NON-COMPLYING STPs

ASSESSED AGAINST

MOEE POLICY

EFFLUENT GUIDELINES

1991

(INCLUDING C OF A PLANTS)

APPENDIX C

SUMMARY OF STP PERFORMANCE, 1991
AGAINST MOEE POLICY EFFLUENT GUIDELINES
AND CANADA – U.S. AGREEMENT
NON–COMPLYING PLANTS AND
PLANTS WITH INSUFFICIENT DATA FOR ASSESSMENT

REGION: 1. SOUTHWESTERN

Legend	
*	non–compliance for that year
C	C of A plants
Y	compliance for that year
ID	insufficient data for assessment
ND	no discharge in that year
NDD	no direct discharge by design
NE	non existent in that year
▨	non–compliance for 3 consecutive years

	Plant Name	Operation Authority	Compliance Status 1991 BOD	SS	TP	1990	1989	1988	1987	Remedial Program	Anticipated Compliance
C	AMHERSTBURG WPCP	MINISTRY	ID	ID	N	ID	Y	Y	N	YES	9201
	BLENHEIM LAGOON	MINISTRY	Y	N	Y	N	N	N	N	YES	9204
	BRIGDEN P.V. LAGOON	MINISTRY	Y	N	Y	Y	N	Y	Y	YES	9204
	COTTAM LAGOON	MINISTRY	Y	N	Y	N	N	N	N	YES	9204
	DUTTON LAGOON	MINISTRY	N	N	N	Y	N	N	N	YES	9201
	GLENCOE LAGOON	MINISTRY	Y	N	Y	N	N	N	Y	YES	9210
	GRAND BEND LAGOON	MINISTRY	Y	N	Y	N	N	N	N	YES	9204
	HARROW LAGOON	MINISTRY	Y	N	Y	Y	Y	Y	N	YES	92
	INGERSOLL NEW WPCP	MINISTRY	Y	Y	N	N	N	N	N	YES	9301
	KILWORTH HEIGHTS WPCP	MINISTRY	Y	Y	N	Y	Y	Y	Y	YES	
	KINCARDINE LAGOON	MUNICIPAL	Y	Y	N	N	N	N	ID	YES	92
C	KINGSVILLE LAGOON	MUNICIPAL	ID	ID	ID	N	ID	N	N	YES	9201
	LEAMINGTON WPCP	MUNICIPAL	Y	N	N	N	N	Y	Y	YES	9301
	LISTOWEL LAGOON CONT DIS (SUMMER SPRAY)	MINISTRY	Y	N	Y	N	Y	N	N	YES	9401
	MERLIN PV LAGOON	MINISTRY	Y	N	Y	Y	N	N	N	YES	9304
	MILVERTON LAGOON	MUNICIPAL	Y	N	Y	N	Y	Y	Y	YES	
	MITCHELL LAGOON	MINISTRY	Y	N	Y	Y	Y	N	N	YES	9312
	OIL CITY LAGOON	MINISTRY	Y	N	Y	Y	Y	ND	N	YES	9210
	OIL SPRINGS LAGOON	MINISTRY	Y	N	Y	N	N	ND	N	YES	
	OWEN SOUND WPCP	MINISTRY	Y	Y	N	Y	Y	Y	N	YES	9111
	PLATTSVILLE LAGOON	MINISTRY	Y	N	N	N	Y	Y	Y	YES	9201
	POINT EDWARD WPCP	MINISTRY	N	N	N	N	N	N	N	YES	9301
	PORT LAMBTON LAGOON	MINISTRY	Y	N	Y	N	Y	N	N	YES	9201
	PORT STANLEY LAGOON	MINISTRY	Y	Y	N	Y	N	Y	Y	YES	9204
	RODNEY LAGOON	MINISTRY	N	N	N	N	N	N	N	YES	9201
	SOMBRA LAGOON	MINISTRY	Y	N	Y	N	Y	N	N	YES	9201
	STONEY POINT P.V. LAGOON	MINISTRY	Y	N	Y	Y	N	N	N	YES	9204
	STRATHROY LAGOON	MUNICIPAL	Y	N	N	N	N	ID	N	YES	93

APPENDIX C

SUMMARY OF STP PERFORMANCE, 1991
AGAINST MOEE POLICY EFFLUENT GUIDELINES
AND CANADA – U.S. AGREEMENT
NON–COMPLYING PLANTS AND
PLANTS WITH INSUFFICIENT DATA FOR ASSESSMENT

REGION: 1. SOUTHWESTERN

Legend

*	non–compliance for that year
C	C of A plants
Y	compliance for that year
ID	insufficient data for assessment
ND	no discharge in that year
NDD	no direct discharge by design
NE	non existent in that year
	non–compliance for 3 consecutive years

Plant Name	Operation Authority	Compliance Status 1991 BOD	SS	TP	1990	1989	1988	1987	Remedial Program	Anticipated Compliance
THEDFORD LAGOON	MINISTRY	Y	N	NR	Y	Y	ND	N	YES	9204
TILBURY LAGOON	MUNICIPAL	ID	ID	ID	ID	ID	N	ID	YES	9301
WATFORD LAGOON	MINISTRY	Y	N	Y	Y	Y	Y	Y	YES	9210

APPENDIX C

SUMMARY OF STP PERFORMANCE, 1991
AGAINST MOEE POLICY EFFLUENT GUIDELINES AND CANADA – U.S. AGREEMENT
NON–COMPLYING PLANTS AND PLANTS WITH INSUFFICIENT DATA FOR ASSESSMENT

REGION: 2. WEST CENTAL

Legend

*	non–compliance for that year
C	C of A plants
Y	compliance for that year
ID	insufficient data for assessment
ND	no discharge in that year
NDD	no direct discharge by design
NE	non existent in that year
▨	non–compliance for 3 consecutive years

Plant Name	Operation Authority	Compliance Status 1991 BOD	SS	TP	1990	1989	1988	1987	Remedial Program	Anticipated Compliance
BAKER ROAD WPCP	MUNICIPAL	Y	Y	N	Y	Y	Y	Y	YES	
CRYSTAL BEACH WPCP	MUNICIPAL	Y	Y	N	N	N	N	N	NO	
C HESPELER WPCP	MINISTRY	Y	N	N	N	N	N	N	YES	9206
JARVIS LAGOON	MINISTRY	Y	N	Y	Y	N	Y	N	NO	
MOUNT FOREST WPCP	MUNICIPAL	Y	Y	N	Y	Y	N	N	YES	9112
PORT DOVER WPCP	MINISTRY	Y	Y	N	Y	N	N	N	YES	
PRESTON WPCP	MINISTRY	Y	Y	N	N	N	Y	Y	YES	92
SMITHVILLE LAGOON	MUNICIPAL	ID	ID	NR	ID	Y	N	N	NO	
ST.JACOBS PV WPCP	MINISTRY	Y	Y	N	N	N	N	N	YES	93
TOWNSEND LAGOON	MINISTRY	Y	N	Y	N	ND	ID	ND	NO	
WOODWARD AVE.WPCP (OFFSITE CHEM.ADDN)	MUNICIPAL	N	Y	Y	Y	Y	N	N	YES	9211

APPENDIX C

SUMMARY OF STP PERFORMANCE, 1991 AGAINST MOEE POLICY EFFLUENT GUIDELINES AND CANADA – U.S. AGREEMENT *NON–COMPLYING PLANTS AND PLANTS WITH INSUFFICIENT DATA FOR ASSESSMENT*

REGION: 3. CENTAL

Legend

*	non–compliance for that year
C	C of A plants
Y	compliance for that year
ID	insufficient data for assessment
ND	no discharge in that year
NDD	no direct discharge by design
NE	non existent in that year
▨	non–compliance for 3 consecutive years

	Plant Name	Operation Authority	Compliance Status							Remedial Program	Anticipated Compliance
			1991			1990	1989	1988	1987		
			BOD	SS	TP						
	BALA WPCP	MUNICIPAL	Y	N	Y	N	N	N	N	YES	
	BRIGHTON LAGOON	MUNICIPAL	Y	Y	N	N	N	N	N	YES	
C	CLARKSON WPCP SOUTH–PEEL SYSTEM	MINISTRY	Y	Y	N	Y	Y	N	Y	YES	
	COBOURG WPCP NO 1	MUNICIPAL	Y	Y	N	N	N	N	N	YES	
	CORBETT CREEK WPCP	MUNICIPAL	N	N	N	N	Y	N	N	YES	
	DUFFIN CREEK WPCP (YORK–DURHAM)	MUNICIPAL	N	N	N	N	N	N	Y	YES	
C	FOX ST SEWAGE TREATMENT PLANT	MUNICIPAL	Y	Y	N	Y	N	Y	Y	YES	
	HALIBURTON WPCP	MUNICIPAL	Y	Y	N	Y	Y	Y	Y	YES	
	HUMBER WPCP (ETOBICOKE)	MUNICIPAL	Y	Y	N	Y	Y	N	N	YES	
	MAIN WPCP (TORONTO)	MUNICIPAL	Y	Y	N	Y	Y	Y	Y	NO	
	OAKVILLE SOUTH WEST WPCP	MUNICIPAL	Y	Y	N	Y	Y	Y	N	YES	91
	PORT HOPE WPCP	MUNICIPAL	Y	Y	N	N	Y	Y	Y	YES	9112
	STAYNER WPCP	MINISTRY	Y	Y	N	N	N	N	N	YES	
	WASHAGO LAGOON	MUNICIPAL	ID	ID	NR	NCA	NCA	NCA	NCA	NO	

APPENDIX C

SUMMARY OF STP PERFORMANCE, 1991 AGAINST MOEE POLICY EFFLUENT GUIDELINES AND CANADA – U.S. AGREEMENT
NON–COMPLYING PLANTS AND PLANTS WITH INSUFFICIENT DATA FOR ASSESSMENT

REGION: 4. SOUTHEASTERN

Legend

*	non–compliance for that year
C	C of A plants
Y	compliance for that year
ID	insufficient data for assessment
ND	no discharge in that year
NDD	no direct discharge by design
NE	non existent in that year
▨	non–compliance for 3 consecutive years

	Plant Name	Operation Authority	Compliance Status 1991 BOD	SS	TP	1990	1989	1988	1987	Remedial Program	Anticipated Compliance
	ALEXANDRIA LAGOON	MINISTRY	Y	Y	N	N	Y	Y	N	YES	9601
C	ALMONTE LAGOON	MINISTRY	Y	Y	Y	N	Y	N	Y	YES	9601
	AMHERSTVIEW LAGOON	MINISTRY	N	N	NR	N	N	N	N	YES	9601
	ARNPRIOR WPCP	MUNICIPAL	N	N	Y	N	N	N	N	NO	
C	BATH WPCP	MUNICIPAL	ID	ID	ID	Y	Y	Y	Y	YES	92
	BROCKVILLE WPCP	MUNICIPAL	Y	N	N	N	N	N	N	YES	93
	CARLETON PLACE WPCP	MINISTRY	N	N	N	N	N	N	N	YES	9401
C	CHALK RIVER WPCP	MINISTRY	Y	Y	N	N	Y	Y	Y	YES	9301
	CHESTERVILLE LAGOON	MINISTRY	Y	N	Y	Y	Y	Y	Y	YES	9301
	DEEP RIVER WPCP	MUNICIPAL	Y	N	NR	Y	N	Y	Y	NO	
	DESERONTO WPCP	MINISTRY	Y	N	N	N	Y	Y	Y	YES	9401
	EMBRUN LAGOON	MUNICIPAL	ID	ID	NR	ND	ND	Y	ID	YES	94
	HAWKESBURY WPCP	MINISTRY	Y	Y	N	Y	Y	Y	N	YES	9301
	INGLESIDE WPCP	MUNICIPAL	N	N	NR	Y	Y	Y	Y	YES	
	IROQUOIS WPCP	MUNICIPAL	Y	N	Y	N	ID	N	N	YES	
	KEMPTVILLE WPCP (TERTIARY PROPSED)	MUNICIPAL	N	N	N	N	N	N	N	YES	
	KINGSTON WPCP	MUNICIPAL	Y	N	Y	Y	Y	Y	Y	NO	
	L'ORIGNAL WPCP	MINISTRY	N	N	NR	Y	Y	Y	N	YES	9301
	MORRISBURG WPCP	MINISTRY	Y	N	NR	N	N	Y	ID	YES	
	PEMBROKE WPCP	MUNICIPAL	N	Y	N	N	Y	Y	Y	NO	
	PICTON WPCP	MUNICIPAL	Y	Y	N	Y	Y	N	N	YES	92
	PLANTAGENET LAGOON	MINISTRY	Y	N	N	N	Y	Y	Y	YES	9301
	RENFREW WPCP	MUNICIPAL	Y	Y	N	Y	Y	Y	N	NO	
C	ROBERT O PICHORD ENV CENTRE	MUNICIPAL	Y	N	N	N	N	N	N	NO	
	RUSSELL LAGOON	MINISTRY	Y	N	Y	N	N	N	N	YES	9212
	SMITHS FALLS WPCP	MUNICIPAL	Y	N	N	N	N	N	N	NO	

APPENDIX C

SUMMARY OF STP PERFORMANCE, 1991
AGAINST MOEE POLICY EFFLUENT GUIDELINES
AND CANADA – U.S. AGREEMENT
NON–COMPLYING PLANTS AND
PLANTS WITH INSUFFICIENT DATA FOR ASSESSMENT

REGION: 5. NORTHEASTERN

Legend

*	non–compliance for that year
C	C of A plants
Y	compliance for that year
ID	insufficient data for assessment
ND	no discharge in that year
NDD	no direct discharge by design
NE	non existent in that year
▨	non–compliance for 3 consecutive years

	Plant Name	Operation Authority	Compliance Status 1991 BOD							Remedial Program	Anticipated Compliance
			BOD	SS	TP	1990	1989	1988	1987		
	BELLE VALLEE LAGOON	MUNICIPAL	N	N	NR	N	ND	Y	Y	YES	93
	COCHRANE WPCP	MUNICIPAL	N	N	NR	ID	ID	ID	N	YES	93
	EARLTON LAGOON	MUNICIPAL	N	N	NR	N	ID	ID	Y	NO	
C	ENGLEHART LAGOON	MINISTRY	Y	Y	N	N	N	N	Y	YES	
	ESPANOLA WPCP	MINISTRY	Y	N	NR	N	N	Y	Y	YES	
	IROQUOIS FALLS WPCP	MINISTRY	N	Y	NR	N	Y	Y	Y	YES	
	MOONBEAM LAGOON	MINISTRY	Y	N	NR	Y	Y	Y	Y	NO	
	MOOSONEE WPCP (OLD TOWNSITE)	MINISTRY	Y	N	NR	N	N	ID	Y	YES	
C	NEW LISKEARD LAGOON	MUNICIPAL	Y	Y	N	N	N	Y	N	NO	
	VERNER LAGOON	MINISTRY	Y	Y	N	N	Y	N	N	YES	
	VIRGINIATOWN AND KEARNS WPCP	MUNICIPAL	Y	N	NR	N	N	N	N	YES	

APPENDIX C

SUMMARY OF STP PERFORMANCE, 1991
AGAINST MOEE POLICY EFFLUENT GUIDELINES
AND CANADA – U.S. AGREEMENT
NON–COMPLYING PLANTS AND
PLANTS WITH INSUFFICIENT DATA FOR ASSESSMENT

REGION: 6. NORTHWESTERN

Legend

*	non–compliance for that year
C	C of A plants
Y	compliance for that year
ID	insufficient data for assessment
ND	no discharge in that year
NDD	no direct discharge by design
NE	non existent in that year
▨	non–compliance for 3 consecutive years

	Plant Name	Operation	Compliance Status							Remedial	Anticipated
			1 9 9 1			1990	1989	1988	1987		
		Authority	BOD	SS	TP					Program	Compliance
	FORT FRANCES WPCP	MINISTRY	Y	N	NR	Y	Y	Y	Y	YES	
C	SCHREIBER WPCP	MINISTRY	N	Y	NR	N	Y	N	N	YES	
	SIOUX LOOKOUT WPCP	MUNICIPAL	Y	N	NR	Y	N	Y	Y	YES	94
C	THUNDER BAY WPCP	MUNICIPAL	Y	Y	N	N	N	N	N	NO	

APPENDIX D

REPORTED

BYPASS OCCURRENCE

1991

APPENDIX D

LIST OF STPs REPORTED BYPASS OCCURENCE IN 1991

REGION : 1. SOUTHWESTERN

	Average Daily Flow	Bypass No. of Days days		Bypass Duration hours		Bypass Volume 1,000 m3			Bypass Volume as % of
Plant Name	1,000 m3/d	Primary	Secondary	Primary	Secondary	Primary	Secondary	Total	Treated Effluent
BELLE RIVER-MAIDSTONE WPCP	5.14	1	0	21.0	0.0	8.590	0.000	8.59	0.5
CLINTON WPCP	2.13	3	0	113.0	0.0	26.000	0.000	26.00	3.3
DURHAM MUN WPCP	1.06	1	0	2.0	0.0	0.059	0.000	0.06	0.0
GODERICH WPCP	7.03	21	0	36.4	0.0	0.000	0.000	0.00	0.0
GREENWAY WPCP	120.74		57		496.4		506.104	506.10	1.1
LEAMINGTON WPCP	16.93			27.0	17.5			0.00	0.0
LITTLE RIVER WPCP	18.21	30		145.0		173.990		173.99	2.6
MEAFORD WPCP	2.99	2	0	15.0	0.0	8.808	0.000	8.81	0.8
POTTERSBURG WPCP	20.08	22		66.4		16.581		16.58	0.2
ST THOMAS WPCP	15.53		203		643.3		196.544	196.54	3.5
STRATFORD WPCP	24.29	3	31	6.0	272.7	1.696	193.738	195.43	2.2
VAN ASTRA WPCP	0.72	15	0	157.4	0.0	6.875	0.000	6.88	2.6
VAUXHALL WPCP	15.90			4.0				0.00	0.0
WALKERTON WPCP	6.18	9	0	140.5	0.0	9.046	0.000	9.05	0.4
WESTERLY WPCP	118.81	26		96.0		331.700		331.70	0.8
TOTAL	376	133	291	830	1,430	583	896	1,480	1.1

APPENDIX D – continued

LIST OF STPs REPORTED BYPASS OCCURENCE IN 1991

REGION : 2. WEST CENTRAL

Plant Name	Average Daily Flow 1,000 m3/d	Bypass No. of Days days		Bypass Duration hours		Bypass Volume 1,000 m3			Bypass Volume as % of Treated Effluent
		Primary	Secondary	Primary	Secondary	Primary	Secondary	Total	
CRYSTAL BEACH WPCP	4.31		141				87.433	87.43	5.6
GALT WPCP	33.37	5	0	10.9	0.0	49.706	0.000	49.71	0.4
PORT DALHOUSIE WPCP	42.25	23		127.5		84.330		84.33	0.5
PORT WELLER WPCP	44.53	10		48.8		17.632		17.63	0.1
PRESTON WPCP	11.00	5	0	3.4	0.0	2.801	0.000	2.80	0.1
STAMFORD WPCP	56.92	41	47	272.6	57.0	16.000	587.902	603.90	2.9
WELLESLEY WPCP	0.44	0	0	0.0	0.0	0.000	0.434	0.43	0.3
WOODWARD AVE. WPCP	319.46	132	60	2335.0	242.0	0.000	1920.700	1920.70	1.6
TOTAL	512	216	248	2,798	299	170	2,596	2,767	1.5

APPENDIX D – continued

LIST OF STPs REPORTED BYPASS OCCURENCE IN 1991

REGION : 3. CENTRAL

Plant Name	Average Daily Flow 1,000 m3/d	Bypass No. of Days days		Bypass Duration hours		Bypass Volume 1,000 m3			Bypass Volume as % of Treated Effluent
		Primary	Secondary	Primary	Secondary	Primary	Secondary	Total	
CORBETT CREEK WPCP	25.31	0	9	0.0	53.0	0.000	14.146	14.15	0.2
GRAVENHURST WPCP (DUAL OPERATION)	2.26	5	0	0.0	0.0	2.521	0.000	2.52	0.3
HUMBER WPCP (ETOBICOKE)	395.89	0	15	0.0	42.1	0.000	387.510	387.51	0.3
HUNTSVILLE WPCP	4.34	13	11	253.5	264.0	74.890	46.840	121.73	7.7
LAKEVIEW WPCP SOUTH – PEEL SYSTEM	255.77	0	3	0.0	16.0	0.000	40.500	40.50	0.0
MAIN WPCP (TORONTO)	844.66	0	33	0.0	154.0	0.000	1776.280	1776.28	0.6
OAKVILLE SOUTH WEST WPCP	40.09		88				747.931	747.93	5.1
ORILLIA WPCP	19.01		6		1838.0		502.079	502.08	7.2
PENETANGUISHENE WPCP MAIN ST PLANT I1	2.94	8	0	101.8	0.0	8.353	0.000	8.35	0.8
PETERBOROUGH WPCP	51.27	0	23	0.0	284.0	0.000	172.235	172.24	0.9
PORT DARLINGTON WPCP	7.77	0	16	0.0	264.0	0.000	84.590	84.59	3.0
PRINGLE CREEK WPCP NO 1	3.28	0	3	0.0	30.0	0.000	20.000	20.00	1.7
PRINGLE CREEK WPCP NO 2	5.53	3	1	34.0	3.4	4.094	24.300	28.39	1.4
SKYWAY WPCP	78.81	0	73	0.0	247.8	0.000	479.674	479.67	1.7
TOTAL	1,737	29	281	389	3,196	90	4,296	4,386	0.7

APPENDIX D – continued

LIST OF STPs REPORTED BYPASS OCCURENCE IN 1991

REGION : 4. SOUTHEASTERN

ERR – Average Daily Flow not available

Plant Name	Average Daily Flow 1,000 m3/d	Bypass No. of Days days		Bypass Duration hours		Bypass Volume 1,000 m3			Bypass Volume as % of Treated Effluent
		Primary	Secondary	Primary	Secondary	Primary	Secondary	Total	
ARNPRIOR WPCP	5.62	16	0	18.8	0.0	2.341	0.000	2.34	0.1
BATAWA WPCP	0.34	0	35	0.0	431.0	0.000	21.960	21.96	17.7
BELLEVILLE WPCP	28.33	6	119	0.0	17.0	32.000	933.200	965.20	9.3
BROCKVILLE WPCP	16.19	5		57.5		85.460		85.46	1.4
CARLETON PLACE WPCP	5.76	14		199.5	1086.7	576.439	0.000	576.44	27.4
COBDEN WPCP	0.66	19		229.0		13.390		13.39	5.6
DEEP RIVER WPCP	2.55	4		5.5		2.044		2.04	0.2
DELORO WPCP		0	64	0.0	1579.9	0.000	379.176	379.18	ERR
DESERONTO WPCP	1.41	9	0	92.3	0.0	15.284	0.000	15.28	3.0
HAWKESBURY WPCP	10.27	31	0	32.3	0.0	91.357	0.000	91.36	2.4
INGLESIDE WPCP	0.94	2		26.2		3.182		3.18	0.9
KINGSTON TWP WPCP	20.24	0	0	31.6	78.0	0.000	0.000	0.00	0.0
L'ORIGNAL WPCP	0.68	5	0	78.0	0.0	4.102	0.000	4.10	1.7
LONG SAULT WPCP	1.46	4	0	126.0	0.0	7.630	0.000	7.63	1.4
NAPANEE WPCP	6.09	0	14	0.0	116.0	0.000	347.052	347.05	15.6
ODESSA WPCP	1.17	0	0	93.0	0.0	0.000	0.000	0.00	0.0
PICTON WPCP	3.37	0	21	0.0	263.2	0.000	62.219	62.22	5.1
PRESCOTT WPCP	4.12	3		0.0		0.039		0.04	0.0
ROBERT O PICHORD ENV CENTRE	514.47	1	0	2.5	0.0	30.000	0.000	30.00	0.0
WATTS CREEK WPCP	25.82	18	6	161.6	7.0	65.900	8.800	74.70	0.8
WELLINGTON WPCP	0.50		2		6.5		0.283	0.28	0.2
TOTAL	650	137	261	1,154	3,585	929	1,753	2,682	1.1

APPENDIX D – continued

LIST OF STPs REPORTED BYPASS OCCURENCE IN 1991

REGION : 5. NORTHEASTERN

Plant Name	Average Daily Flow 1,000 m3/d	Bypass No. of Days days		Bypass Duration hours		Bypass Volume 1,000 m3			Bypass Volume as % of Treated Effluent
		Primary	Secondary	Primary	Secondary	Primary	Secondary	Total	
AZILDA WPCP	2.22	2		108.0		5.227		5.23	0.6
BLIND RIVER WPCP	2.06	2			17.0	2.568		2.57	0.3
CONISTON WPCP	1.63	2		49.3		10.100		10.10	1.7
ESTEN LAKE WPCP	6.33	3	0	8.5	0.0	6.100	0.000	6.10	0.3
HORNEPAYNE WPCP	0.82	3		41.0		0.908		0.91	0.3
KAPUSKASING WPCP	5.78	1		3.0		0.910		0.91	0.0
KIRKLAND LAKE WPCP	10.69	25		190.9		97.070		97.07	2.5
LIVELY WPCP	1.88	1		8.7		2.200		2.20	0.3
MATHESON WPCP	0.54	7		91.5		42.366		42.37	21.5
MATTAGAMI WPCP	18.02			0.2				0.00	0.0
MOOSONEE WPCP (OLD TOWNSITE)	0.80	1	1	6.0	13.5	0.090	0.045	0.14	0.0
SUDBURY WPCP	64.59	6		106.5		241.333		241.33	1.0
TOTAL	115	53	1	614	31	409	0	409	1.0

APPENDIX D – continued

LIST OF STPs REPORTED BYPASS OCCURENCE IN 1991

REGION : 6. NORTHWESTERN

Plant Name	Average Daily Flow 1,000 m3/d	Bypass No. of Days days		Bypass Duration hours		Bypass Volume 1,000 m3			Bypass Volume as % of Treated Effluent
		Primary	Secondary	Primary	Secondary	Primary	Secondary	Total	
ATIKOKAN WPCP	3.53	6	0	5.0	0.0	0.571	0.000	0.57	0.0
FORT FRANCES WPCP	7.92	1		12.0		2.390		2.39	0.1
GERALDTON WPCP	1.86	0	10	0.0	180.2	0.000	7.570	7.57	1.1
MARATHON WPCP	1.78	0	5	0.0	87.5	0.000	1.810	1.81	0.3
TERRACE BAY WPCP	0.31	2	0	1.4	0.0	1.879	0.000	1.88	1.7
TOTAL	15	9	15	18	268	5	9	14	0.3

APPENDIX E

ADDRESSES AND PHONE NUMBERS

OF MOEE

REGIONAL AND DISTRICT OFFICES

1991

APPENDIX E

ADDRESSES AND PHONE NUMBERS OF MOEE REGIONAL AND DISTRICT OFFICES

1. SOUTHWESTERN REGION

REGIONAL OFFICE

London
985 Adelaide St. South
N6E 1V3
(519)-661-2200

DISTRICT OFFICES

Owen Sound
1180 20th St. East
N4K 6H6
(519)-371-2901

Sarnia
265 North Front St.
N7T 7X1
(519)-336-4030

Windsor
250 Windsor Avenue
N9A 6V9
(519)-254-2546

SUB-OFFICES

Chatham
c/o Ministry of
Agriculture & Food
435 Grand Avenue West
N7M 5L1
(519)-354-9434

Clinton
c/o Ministry of
Agriculture & Food
P.O. Box 688
N0M 1L0
(519)-482-3428

2. WEST CENTRAL REGION

REGIONAL OFFICE

Hamilton
119 King St. West
P.O. Box 2112
L8N 3Z9
(416)-521-7640

DISTRICT OFFICES

Cambridge
400 Clyde Road
P.O. Box 219
N1R 5T8
(519)-622-8121

Hamilton
119 King St. West
P.O. Box 2112
L8N 3Z9
(519)-521-7640

Welland
637-641 Niagara St. West
L3C 1L9
(416)-384-9896

3. CENTRAL REGION

REGIONAL OFFICE

Toronto
7 Overlea Blvd.
M4H 1A8
(416)-424-3000

DISTRICT OFFICES

Barrie
12 Fairview Road
K4N 4P3
(705)-726-1730

Halton-Peel
1235 Trafalgar Road
Suite 401, Oakville
L6H 3P1
(416)-844-5747

Metro Toronto East
7 Overlea Blvd.
M4H 1A8
(416)-467-3013

Metro Toronto West
7 Overlea Blvd.
M4H 1A8
(416)-467-3007

Muskoka-Haliburton
483 Bethune Drive
Gravenhurst
P1P 1B8
(705)-687-6647

Peterborough
139 George St. North
K9J 3G6
(705)-743-2792

York-Durham
7 Overlea Blvd.
M4H 1A8
(416)-467-3009

ADDRESSES AND PHONE NUMBERS OF MOEE REGIONAL AND DISTRICT OFFICES

4. SOUTHEASTERN REGION

REGIONAL OFFICE

Kingston
133 Dalton Street
Box 820
K7L 4X6
(613)–549–4000

DISTRICT OFFICES

Cornwall
205 Amelia Street
K6H 3P3
(613)–933–7402

Kingston
133 Dalton Street
Box 820
K7L 4X6
(613)–549–4000

Ottawa
2378 Holly Lane
K1V 7P1
(613)–521–3450

SUB–OFFICES

Belleville
15 Victoria Avenue
K8N 1Z5
(613)–962–9208

Pembroke
1000 MacKey Street
K8B 1A3
(613)–732–3643

5. NORTHEASTERN REGION

REGIONAL OFFICE

Sudbury
199 Larch Street
P3E 5P9
(705)–675–4501

DISTRICT OFFICES

North Bay
1500 Fisher Street
P1B 2H3
(705)–476–1001

Sault Ste. Marie
445 Albert St. East
P6A 2J9
(705)–949–4640

Sudbury
199 Larch Street
P3E 5P9
(705)–675–4501

Timmins
83 Algonquin Blvd. West
P4N 2R4
(705)–268–3222

SUB–OFFICES

Parry Sound
74 Church Street
P2A 1Z1
(705)–746–2139

6. NORTHWESTERN REGION

REGIONAL OFFICE

Thunder Bay
435 James St. South
P.O. Box 5000
P7C 5G8
(807)–475–1205

DISTRICT OFFICES

Kenora
808 Robertson Street
P9N 1X9
(807)–468–2718

Thunder Bay
435 James St. South
P.O. Box 5000
P7C 5G8
(807)–475–1205